

**Critical Explorations**

# **Research Anthology on Innovative Research Methodologies and Utilization Across Multiple Disciplines**



**Information Resources Management Association**



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# Research Anthology on Innovative Research Methodologies and Utilization Across Multiple Disciplines

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*USA*



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## Preface

Research methodology is as old as academia itself. Research methodology shifts in strategy as it crosses different disciplines and theories. This, too, is true with the shifting landscape of research opportunities and technologies available to global researchers. To achieve the most accurate and substantial research, it is important to be knowledgeable of emerging research methodologies.

Thus, the *Research Anthology on Innovative Research Methodologies and Utilization Across Multiple Disciplines* seeks to fill the void for an all-encompassing and comprehensive reference book covering the latest and most emerging research, concepts, and theories for those working in academia and research and development. This two-volume reference collection of reprinted IGI Global book chapters and journal articles that have been handpicked by the editor and editorial team of this research anthology on this topic will empower students and faculty of higher education, scientists, researchers, sociologists, computer scientists, and academicians.

The *Research Anthology on Innovative Research Methodologies and Utilization Across Multiple Disciplines* is organized into five sections that provide comprehensive coverage of important topics. The sections are:

1. Multidisciplinary Utilization;
2. Ethnography and Autoethnography;
3. Mixed Methods Research;
4. Research Design and Technology; and
5. Methodology Review and Application.

The following paragraphs provide a summary of what to expect from this invaluable reference tool.

Section 1, “Multidisciplinary Utilization,” presents the applications of different research methodologies within multidisciplinary contexts. The first chapter, “Critical Theory in Research,” by Profs. Icarbord Tshabangu and Stefano Ba’ of Leeds Trinity University, UK and Prof. Silas Memory Madondo of CeDRE International Africa, Zimbabwe, focuses on the first generation of Frankfurt School (mainly to authors such as T.W. Adorno, M. Horkheimer, and W. Benjamin). For discussing methodology in research, these authors are considered more representative than the younger generation (e.g., Habermas and Honneth) mainly because of the renewed interest in the direct critique of society and because of the failure of the younger generation to produce empirical research. The next chapter, “Systematic Review as a Research Method in Library and Information Science,” by Prof. Mercy Mlay Komba of Mzumbe University, Tanzania and Prof. Edda Tandi Lwoga of College of Business Education, Tanzania, assesses the current state of application of systematic reviews (SRs) in the library and information science (LIS)

field and determine how information scientists can advance the SRs as a methodology. The following chapter, “Research Methods and Methodologies Used in Studies on Social Accounting,” by Prof. Maria da Conceição da Costa Tavares of University of Aveiro, Portugal and Prof. Alcina Portugal Dias of Polytechnic Institute of Porto, Portugal, discusses the roles and effects of the paradigms in accounting research, in general, and social accounting research, in particular, aiming to know and understand the research lines that better define a theoretical scope of analysis for the social accounting practice. The next chapter, “Action Research in Practice-Based Doctoral Programs,” by Prof. Colleen M. Halupa of A. T. Still University, USA & East Texas Baptist University, USA, provides an overview of action research, approaches and models, ethical concerns, best practices, criticisms of this research method, its use in doctoral education including dissertations and other research projects, and provides examples of action research in practice-based doctoral education in business, education, and healthcare. The following chapter, “Teacher Activities in Adaptation of Innovative Study Methods at University: Theoretical and Practical Implications,” by Profs. Lina Gaiziuniene, Brigita Janiunaite, and Jolita Horbacauskiene of Kaunas University of Technology, Lithuania, discusses teacher adaptability to innovative study methods, how that adaptation affects other elements of the pedagogical system, and what possible variations exist in the process of innovative study method adaptation. The next chapter, “Cognitive vs. Social Constructivist Learning for Research and Training on the Angoff Method,” by Prof. Ifeoma Chika Iyioke of Michigan State University, USA, aims to revitalize the use of the Angoff method in measuring students’ performance in the educational contexts by offering guidance on the constructivist learning perspective that is more appropriate for training K-12 teachers. The final chapter of this first section, “Studying Medical Records Management in the Public Healthcare Sector of South Africa Using Multi-Method,” by Prof. Ngoako Solomon Marutha of University of South Africa, South Africa, reflects on the lesson learnt from the application of multi-methods in a quantitative study that was conducted to study patient record management in the public healthcare sector.

Section 2, “Ethnography and Autoethnography,” details the application of both ethnography and autoethnography within different levels of research. The first chapter of this section, “Self-as-Subject for Doctoral Research,” by Prof. Robin Throne of Northcentral University, USA, presents reflections on the use of self-as-subject research within doctoral education as a pathway to explore meaning of study phenomena to uncover new knowledge from the individual of the self. The next chapter, “Autoethnography and Other Self-Inquiry Methods for Practice-Based Doctoral Research,” by Prof. Robin Throne of University of the Cumberland, USA and Prof. Crystal Lewis of Northcentral University, USA, presents current trends and scholarship for the use of autoethnography and other self-inquiry research methods for practice-based doctoral research. The chapter also presents one case from a recent doctoral autoethnographer to illustrate the experience of a practice-based autoethnographic dissertation study within a practitioner doctoral program. The following chapter, “Ethnographic Research,” by Profs. Icarbord Tshabangu and Stefano Ba’ of Leeds Trinity University, UK and Prof. Silas Memory Madondo of CeDRE International Africa, Zimbabwe, considers some of the essential features of ethnography as a qualitative method. The final chapter of this section, “Autoethnography in Information Science Research: A Transformative Generation and Sharing of Knowledge or a Fallacy?” by Profs. Vicki Lawal and Connie Bitso of University of Fort Hare, South Africa, examines the concept of autoethnography as a qualitative research method. It aims to investigate the critical question of the importance of autoethnography as a transformative scientific research method for the purpose of generating and sharing knowledge to advance research in information science.

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Section 3, “Mixed Methods Research,” presents the design and applications of research using a mixture of different methodology to suit the needs of the researcher. The first chapter of this section, “Designing a PhD Proposal in Mixed Method Research,” by Prof. Ndungi wa Mungai of Charles Sturt University, Australia, reviews the challenges and advantages of writing a mixed method research (MMR) proposal. The argument put forward is that a mixed method approach overcomes the shortcomings of the commonly used qualitative and quantitative methods. The next chapter, “Mixing Methodologies: A Sliding Continuum or an Iterative Cycle?” by Prof. Jo Denton of University of Warwick, UK, explores what combining qualitative and quantitative methods actually means in terms of social and educational research and how this can assist in developing a mixed methodological approach suitable for addressing wicked problems faced in education in the rapidly evolving Anthropocene epoch. The following chapter, “Thinking Outside the Boxes: Communication, Mixed Method, and Convergence,” by Prof. Safak Etike of Yozgat Bozok Universitesi, Turkey, conducts a critical discussion within a political economy framework on the use of mixed method, which is an increasing tendency in communication research, and its philosophical foundations in post-positivism. The next chapter, “The Movement of Mixed Methods Research and the Role of Information Science Professionals,” by Prof. Patrick Ngulube of University of South Africa, South Africa, traces the common characteristics and designs of mixed methods research, its growth, and application in research. It provides a framework to design, execute, and evaluate mixed methods research studies so that library and information science researchers and researchers from other fields may play a role in its development and application. The following chapter, “Integration in Mixed Methods Research Designs by Graduate Students at the University of Science and Technology,” by Prof. Notice Pasipamire of National University of Science and Technology, Zimbabwe, reports on a study that investigated how graduate students in the Faculty of Communication and Information Science at NUST were approaching integration in their mixed-methods research dissertations. The final chapter of this section, “Mixed Methods Research Design,” by Prof. Mette L. Baran of Cardinal Stritch University, USA, introduces the various design choices researchers need to decide on prior to conducting a study. The chapter starts with a detailed description of what research design is, followed by an explanation of descriptive, explanatory, or exploratory research questions.

Section 4, “Research Design and Technology,” provides emerging designs and technological tools meant to assist researchers. The first chapter of this section, “Developing a Research Method to Analyze Visual Literacy Based on Cross-Cultural Characteristics,” by Profs. Roberto Therón, José Carlos Sánchez-Prieto, Felicidad García-Sánchez, José Gómez-Isla, and Juan Cruz-Benito of University of Salamanca, Spain, presents a new approach of a quantitative analysis used to research the understanding of visual literacy issues. The next chapter, “Knowledge Visualization for Research Design: The Case of the Idea Puzzle Software at the University of Auckland,” by Prof. Ricardo Morais of Universidade Católica Portuguesa, Portugal and Prof. Ian Brailsford of University of Auckland, New Zealand, presents a case of information and communication technology use in doctoral research processes. In particular, it presents the use of the Idea Puzzle software as a knowledge visualization tool for research design at the University of Auckland. The following chapter, “Research Design and Methodology,” by Prof. Carlton Brown of University of Plymouth, UK, presents the research design methodology. It outlines the research process and the philosophical underpinning for this research. The next chapter, “Personal Diary Method: A Way of Collecting Qualitative Data,” by Profs. Farrah Zeba and Pankaj Kumar Mohanty of IFHE Hyderabad, India, illustrates how the diary method of data collection can be a better option than other data collection tools in cases where the informants are likely to experience difficulties in recalling past consumption experience. The following chapter, “Setting Up and Running a Q-Methodology Study in an Online

Survey Research Suite,” by Prof. Shalin Hai-Jew of Kansas State University, USA, describes the setting up of a visual q-sort and the related debriefing on the Qualtrics Research Suite. The available data may be extracted and analyzed in a basic statistical analysis tool for factors and preference clusters. The next chapter, “Case Study as a Method of Qualitative Research,” by Prof. Naila Iqbal Khan of MANIT, India, guides the novice researcher in identifying the key elements for designing and implementing qualitative case study research projects. The following chapter, “Fundamentals of Delphi Research Methodology,” by Prof. Kaye Shelton of Lamar University, USA; Prof. Christine A. Haynes, an Independent Researcher from Australia; and Prof. Kathleen Adair Creghan of Columbus Independent School District, USA, introduces the Delphi method, reviews the methodology, discusses types and variations in Delphi studies, addresses the advantages and limitations, and provides clear, step-by-step guidelines for employing a Delphi method research study. The final chapter of this section, “A Primer on Q-Method and the Study of Technology,” by Prof. Stéphanie Gauttier of Grenoble Ecole de Management, France, focuses on explaining how Q-method works, so that readers are equipped to set up their own Q-studies. It is based on prior literature and ongoing reflections being held by Q-methodologists online.

Section 5, “Methodology Review and Application,” reflects on both the critiques and praise of research methods from research scholars. The first chapter of this final section, “The Grounded Theory Methodology in Organization Studies Within Qualitative Research,” by Prof. Maryam Ebrahimi, an Independent Researcher from Germany, explains the GT methodology and identifies its application in an organizational research context. The next chapter, “Designing a PhD Proposal in Qualitative Research,” by Prof. M. Rezaul Islam of University of Dhaka, Bangladesh and University of Malaya, Malaysia, examines the main aspects of the research proposal design process in qualitative research. The author explores a template of a research design to give a clear and robust understanding about the different steps involved in the research proposal design process. The following chapter, “The Types of Case Studies in Research and Career-Based Endeavors,” by Prof. Laurie Wellner of Colorado State University Global, USA and Prof. Kathleen Pierce-Friedman of University of Arizona Global Campus, USA, focuses on the overarching components of the case study methodology in the context of research and career-based teaching and organizational learning settings. More specifically, this chapter, presented in several distinct sections, provides a description of the various types of case studies that can be selected for research purposes as well as for use as a teaching tool for career professionals, higher education faculty, and others interested in employing this type methodology. The next chapter, “The Contribution of Case Study Research in Information Science,” by Prof. Beatrice Ngulube of Tshwane University of Technology, South Africa, demonstrates how case study research can add value to a research project. The following chapter, “Qualitative Methods in Research: Alternative Approaches and Navigating Complexities,” by Profs. Icarbord Tshabangu and Stefano Ba’ of Leeds Trinity University, UK and Prof. Silas Memory Madondo of CeDRE International Africa, Zimbabwe, discusses various methods and approaches to data collection under the qualitative methodology framework, noting that these methods provide rigour and depth understanding in an inquiry. The next chapter, “Thematic Analysis in Qualitative Research,” by Prof. Anindita Majumdar of University of Calcutta, India, describes the application of thematic analysis and the trained expertise required. Thematic analysis, through its theoretical freedom, flexibility, rich and detailed analytical account has emerged as the widely used and most effective qualitative research tool in social and organizational contexts. The following chapter, “Learner Perception of Using Case Study Method as a Teaching Method in Higher Education,” by Prof. Ana María Pinto-Llorente of University of Salamanca, Spain, explores learners’ perception of case study method within the context of a Degree in Infant Education. The final chapter, “‘Asking the Woman Question’ in Case Study Research,” by

## **Preface**

Prof. Nicoletta Policek of University of Cumbria, UK, argues that case study research, even when about women, hinders the experiences of women. The reality of women's lives is absent from the domain of case study research because the language adopted when framing case study research is still very much talking about women, but does not allow women to speak.

Although the primary organization of the contents in this work is based on its five sections offering a progression of coverage of the important concepts, methodologies, technologies, applications, social issues, and emerging trends, the reader can also identify specific contents by utilizing the extensive indexing system listed at the end. As a comprehensive collection of research on the latest findings related to research methodology, the *Research Anthology on Innovative Research Methodologies and Utilization Across Multiple Disciplines* provides students and faculty of higher education, scientists, researchers, sociologists, computer scientists, academicians, and all audiences with a complete understanding of the challenges that face those conducting academic research. Given the swift evolution of technology and information exposure, it is imperative for researchers to stay current with emerging research methodologies and technologies. This extensive book presents the latest research and best practices to address these challenges and provide further opportunities for improvement.



Section 1

# Multidisciplinary Utilization

# Chapter 1

## Critical Theory in Research

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### ABSTRACT

*Based on critical theory, this chapter focuses on the first generation of Frankfurt School (mainly to authors such as T.W. Adorno, M. Horkheimer, and W. Benjamin). For discussing methodology in research, these authors are considered more representative than the younger generation (e.g., Habermas and Honneth) mainly because of the renewed interest in the direct critique of society and because of the failure of the younger generation to produce empirical research. The proponents of critical theory establish connections between theory and practice, in the sense that the social content of research must have human dignity at its centre. The difference between method-led and content-led research is discussed and considered central for this kind of approach to empirical research. Feminist research methodologies and critical race methodology are considered as closely associated with critical theory. These different approaches have developed autonomously from critical theory and are not directly related to it. However, feminist research methodologies and critical race methodology are expounded here because of their similarities to the critical theory of the Frankfurt School aimed at providing an emancipatory approach to empirical research.*

### INTRODUCTION

The 'first generation' of Frankfurt School, mainly authors such as T.W. Adorno, M. Horkheimer, H. Marcuse and W. Benjamin, have a bad reputation concerning empirical research, in the sense that their critique of social injustices, and modernity more in general, was accused of having paralysing effects on the impulse of researching the circumstances of specific social conditions and social actors. However,

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recent scholarly studies on Adorno's Critical Theory (Benzer, 2011; Holloway, Matamoros & Tischler, 2009; Holloway, 2010) and the influence of broader critical approaches (Bonefeld, 2014; Best, Bonefeld & O'Kane, 2018) are making the overall critical enterprise of the early Frankfurt School appealing to several fronts. Not least to those who are not satisfied with the mainstream methods of social sciences, still influenced by positivism (and indeed this term will be used to refer to mainstream social science).

This chapter then explores some fundamentals of Critical Theory's social philosophy and social criticism considering their potentials for social research. This chapter will provide a broad induction to the approach of Critical Theory and other critical methodologies, such as Feminist Methodologies and Critical Race Methodology, insofar as these approaches have developed methodologies very close to the principles of Critical Theory.

This chapter is targeting undergraduate students, but also post-graduate students and early career researchers who are disappointed in mainstream research methods and their apparent disregard for the emancipatory potentials of social sciences. This chapter aims at explaining as simply as possible the tenets of Critical Theory and how these principles have been applied to empirical research. This chapter may be appealing to postgraduates and early career researchers who are cut out from big research grants, because Critical Theory offers effective tools to pursue an objective social inquiry that is content-led, rather than method-led. In this examination, Critical Theory is considered that of the 'first generation' of the Frankfurt School of Critical Theory, to be precise: Theodor W. Adorno (1903-1969), Max Horkheimer (1895-1973), Walter Benjamin (1892-1940), Herbert Marcuse (1898-1979), Friedrich Pollock (1894-1970), Leo Lowenthal (1900-1993) and Eric Fromm (1900-1980). The reason for privileging the first generation is double: firstly Habermas' linguistic turn has lost its initial impulse and (*contra* Marrow, 1994) never really produced empirically-informed critical research (Best, Bonefeld, & O'Kane, 2018); secondly, several scholars are now referring to the 'negative turn' of Adorno as one of the main theoretical sources for critical projects and for renewing social analysis (Dinerstein et al., 2020; Holloway, Matamoros & Tischler, 2009).

To our knowledge, there is no systematic presentation of Critical Theory's approach to empirical research. Marrow's *Critical Theory and methodology* (1994) has Habermas' as a reference point, rather than the 'first generation' of the Frankfurt School. The only systematic approach of this kind is in Benzer's *The Sociology of Theodor Adorno* (2011), where there are two chapters on Adorno's empirical studies and methodology. However, these represent philological studies, rather than an exposition of the kind attempted here.

The chapter explores the general approach to Critical Theory paying attention to the type of critique to mainstream social research that its proponents developed during a long period. Furthermore, connections between theory and practice are explored, in the sense that for the proponents of this approach the social content of research must have human dignity at its centre. In this section, the difference between method-led and content-led research will be discussed. Feminist Research Methodologies and Critical Race Methodology can be taken as instances of Critical Theory applied to empirical research; in that sense, these will be briefly presented. Examples of research carried out by proponents of these two approaches will be illustrated. Lastly, this chapter will examine how best to do critical research and will illustrate this with an in-depth example of Critical Theory's empirical research.

By the end of this chapter, the reader should be able to understand the difference between Critical Theory and traditional theory and show knowledge of specific approaches, such as Critical Race Methodology or Feminist Research Methodologies, their positions within social science and their main principles. Furthermore, the reader will be able to demonstrate how a research project deals with the

criteria of ‘objectivity’ in a critical way that develops a rigorous research project even though constrained by lack of material resources (such as money). Though examples and tasks, the reader should be able to use their own subjective experience as a source of ‘cultural intuition’ and ‘theoretical sensitivity’.

## **BACKGROUND**

Before further making the case for Critical Theory, it is important to put forward two clarifications: with Critical Theory, some different approaches are often confused, most notably the post-structuralist approach to social sciences. While Max Horkheimer (2002) used this term in the 1930s to develop a research programme about the social, political and economic transformation of capitalism, later on in the 1970s and 1980s authors associated to post-structuralism and post-modernism appropriated this label to describe their work in a broad sense and to dissociate themselves from mainstream social science. This has created a certain level of confusion because Critical Theory (as defined above) would be critical of post-structuralism (e.g. Bonnet, 2009; Holloway, 2010). As pointed above, here Critical Theory is strongly associated with the ‘first generation’ of Frankfurt School, again authors such as T.W. Adorno, M. Horkheimer and W. Benjamin. The term Critical Theory is now very much linked to the intellectual enterprise of Habermas and Honneth, and this again may create confusion as to what constitutes the main focus of the critical approach, as Habermas shifted the conceptual terrain from existing social relations to linguistic and normative rationality. However, on the back of very recent scholarly work (e.g. Best, Bonefeld & O’Kane, 2018; Dinerstein et al., 2020) it is possible and defensible to maintain that an exclusive focus on Adorno’s (but again also on Horkheimer’s, Benjamin’s and Marcuse’s) Critical Theory.

## **Why Critical Theory?**

The specific approach of Critical Theory maintains that social science research should find out the important and vital issues for us and that personal experience of social issues (especially in the case of the experience of disadvantage) is not just ‘personal’ but can be the basis for reflection and inquiry. This should be taken as a very interesting perspective because it is neither linked to methodological purity nor accept a purely deductive approach, that would dispense us from talking to people and assessing their experiences and circumstances. It is an approach that sides with those at the margin of society as much as those who are at the margin of official, well-funded administrative research, representing the ‘cunny’ of the reason for developing a critique of social reality.

## **Social Science and Empirical Research**

Max Horkheimer (2002) distinguishes Critical Theory from traditional theory in the terrain of practice: influenced by Marx’s critique of capitalism, the main aim for theory is changing the social conditions of exploitation and injustice. This concept of practice does not rest on normative assumptions, that is, on ideals formulated in abstract by the theorists themselves. Rather, the theory’s task for practice is to find out social trends that inherently challenge the conditions of exploitation and injustice. Social research is about finding out if, how and when social actors can transform their conditions to achieve greater freedom and equality. Critical Theory aims to find what are the main struggles, hopes, desires that are

coming out of social practices and how these practices can be understood as values; moral and political values understood not in the abstract, but the concrete sense.

## **Stop and Reflect**

*Is Critical Theory's aim to simply going out there and collecting data? No, Critical Theory approach does not start from 'zero', or a blank sheet. It always assumes a human interest in the research and assume that existing social conditions are far from ideal and need a change to obtain a greater amount of social justice*

From these premises, the methodology inspired by Critical Theory needs to be attuned not simply to facts, but the potentiality of human action. Adorno (Bobka & Braunstein, 2018) maintain that 'dialectics is the ontology of the wrong state of things', which means that in the everyday social practice there is already the potentiality to resist injustice. But this potentiality is hard to be revealed by standard methodologies. Hence the continuous polemic of Adorno (and more recent social science researchers) with positivist and main-stream approaches. In a few texts on methodology and Critical Theory, it is stressed that the Frankfurt School resisted the quantifying aspects of positivist sociology to privilege a more subjective approach to the data of social science. In other words, there is a common understanding that Adorno, Marcuse and others, in criticising the 'objectivity' of economic and social science, aligned themselves with an interpretive approach to the analysis of society. If it is true that interpretation of data, in the sense of the understanding of social phenomena, belongs to Critical Theory, it is also true that they rejected the label 'subjective', which to be sure they reserved for the positivistic approach. Indeed, Adorno talked about objective tendencies of society, about general trends of objectification and reification. Let's see this more in details.

Horkheimer and Adorno (Jay, 2020), but also Benjamin (Kaufmann, 2018; Loewy, 2016; Vedda 2013), maintained that mainstream social science, influenced by the positivistic paradigm, was 'subjective' even when using quantitative data: this because the starting point of this science is a subject which is completely severed from social relations, and observes social reality as if it is something separated from the subjects and their social relations. These social relations are constituted by subjects, even if these relations tend to assume an automatic, independent form. The positivist and mainstream social science tend to understand the object of research as something external from the mind of the researcher, and for that reason, it tends to be unreachable. On the contrary, the objective approach implies a social subject constructing the social object, in other words, it is 'us' that constitute social reality. The 'object' of the research is always constituted through history and collective action, but the researcher is part of that history and that collective action. It is then possible to know this process of constitution of the object, as it is done by human beings. Yes, it is not a transparent process, it happens at the back of individuals': the social relations tend to assume an independent character from the people that perform these relations, however, social groups are involved in this complex process of social creativity and the substance of the social object so created is part of a shared, social substance.

## **Stop and Reflect**

*Is it possible to do qualitative research, starting from a very particular point of view (in terms of 'human interests') and still claim objectivity? Given that objectivity should mean a social process in which*

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*all the members of a social group are involved and broadly aware of, then yes, it is acceptable for the research process to start from 'human interests. For Critical Theory (Reitz, 2018) there is no external reality completely independent from the human mind and human interest. The point is to know more about this reality to address issues of inequality.*

## **The Critique of Mainstream Social Research**

The fundamental objection to the mainstream social science research procedure is that it does not account for the concept of 'totality', the totality of society (Adorno, 2019), that is: society is a whole that influences all of us, on all the parts of society itself and it is not possible to fully understand a part of it (let's say education or childhood) without having a general idea of the whole. Critical theorists denounce as improbable the project of researching society in an atomistic fashion, in the sense that even a large number of empirical studies on a segment of society (let's say family) cannot produce full knowledge of it, but only a series of discrete and evermore analytical reports on part of that segment itself. One just needs to browse a handbook of Sociology of Family to see that this concept (family) is taken from several different points of view and segmented through many different substantive issues which are not possible to be reconducted into a unifying view.

To obtain the sense of totality above mentioned, empirical research methods have serious limitations and simply cannot achieve that. The research paradigm influenced by positivism is so concerned about establishing 'facts' and so focused in making the research procedure 'objective' that necessarily produce a major split between the need for logical clarity and actual empirical material. On one hand, the need for logical clarity requires ever more clear categories and the 'operationalisation' of concepts, which becomes ever more an abstract procedure. On the other hand, the obvious 'scientific' need for empirical material is ever more entrapped in the need for basic observable facts, which tend to become divorced by any social relations experienced by subjects. From these two 'prongs' (Adorno, 2019), there comes the difficulty for mainstream science to say anything that has a precise foundation in clear concepts and at the same time strictly grounded on empirical material.

It is through reflection on the concepts to be used for research that Critical Theory tries to solve the problem. The object to be researched should not be thought of as something completely separated by the subject who is researching. Furthermore, social 'objects' and social issues should be thought as something in between facts and possibilities, or better: something that has an existence and something that has the potentiality of being something else (Adorno, 2019). This is not an idealist as it looks: Raymond Aron (2019) analysed how even one of the founding fathers of sociology, the positivist Emile Durkheim, had to postulate something similar for his total concept of social constraints and social force. Aron shows how in Durkheim's work of the basic elements of religion (in his sociology of religion and culture), society needs to be taken as it is and as an 'ideal focal point'. But let's make another example of this point.

### **Example 1: What Is Work?**

*Work has been framed as part of industrial sociology and always connected with employer-employee wage relationships. However feminist sociologists discovered housework as work, even if it is unpaid, simply shifting the perspective from what is usual to what is not usual. In this case, the unusual perspective was always linked to the possibility that housework may be recognised as work and valued, whether monetarily or not. In this example, the social fact of housework had to be conceptualised against a state*

*of things which saw women exploited in the household. It had to be conceptualised against a practical idea of equality. Only after these theoretical and practical moments, housework was 'discovered' empirically. We also must add that there was not simply a theoretical discovery: housework had to 'traverse' women's social experience. This example tells us how 'social objects' are never something that is completely severed from us and from social practices that we (in very different degrees, as the historical experience of women may prove) are involved in. Moreover, in this example, we see how positivist science had to narrowly define 'work' and missed the gendered experience of work. Positivist approaches to work had to atomise the concept of work and isolate, or even sanitise the experience of work to research it empirically. We can say that through reflection, feminist scholars managed to achieve a more accomplished sense of totality which made justice to the experience of women whilst generating concepts that were dealing with society.*

As a further difficulty of the positivist approach, Adorno (Bobka & Braunstein, 2018) highlights how the rationality of the method cannot be separated from the rationality that produces categories in the social world, categories that have an administrative use, in the sense of maintaining social order and social control over subjects. The mainstream methods often tend to fix states of facts as natural, rather than historical, to give these facts a semblance of relations between things, rather than human arrangements that can be changed. At that regards Horkheimer and Adorno (Jay, 2020) mention the specific phenomenon of 'reification', a social tendency of transforming social relations in natural things: through this phenomenon human activity is valued not for the relations it establishes but only for the visible and measurable effects it produces.

## **Example 2: An Example of Reification**

*As an example of reification, we can assume how a teacher is not valued for the type of relationships she establishes with pupils, but only for the measurable side of the tests her pupils produce and for the wage (in terms of the amount of money) she is accountable for. So, reification turns everything social in almost natural quantities in the same way the categories of positivist empirical research tend to fix as data social issues that are continuously constituted and shaped by social practices.*

## **Human Dignity in Researching Society**

It is not a coincidence that Critical Theory and other critical methodologies strive to save the 'dignity' of the social object under examination: first, because these social objects are the products of social relations. Even in the case of a social object like 'traditional values', for mainstream social sciences, the standard procedure would be to carry out a survey whereby standardised questions would have standardised answers, with a numerical value associated to them (Adorno, 2019). These standardised questions, and the numerical value associated to the answers, may have in the end little to do with the historical reconstruction of the traditions and values of a given community, their experience and their collective endeavour. In any case, the standard survey would posit its objectivity in the mere sum of subjective answers, subjective opinions given to the rigidly standardised questions. Critical Theory would strive to recuperate the sense of dignity of the given community first, in the same way Critical Race Methodology's counter-narratives give voice to oppressed ethnic minorities.

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However, the appeal to human dignity should not make us think that this would be the only reason whereby Critical Theory is suspicious of quantitative methods. Adorno (2019) thinks that human dignity cannot represent a guarantee for emancipation. On that basis, quantitative empirical material can serve critical purposes, exactly because it may show that in some social circumstances human dignity is denied.

### **Illustration 1: The 'Cycle of Poverty'**

*To illustrate how certain types of quantitative research can be used to (and interpreted in the sense of providing evidence in) support to human dignity let's take the case of research on the 'cycle of poverty'. The hypothesis of 'cycle of poverty' would maintain that children who are born from disadvantaged families and experience lack of resources (and even care) from an early age, are then very likely to fall into poverty in later life, and indeed to reproduce the very same conditions of this material disadvantage for their offspring. Thus, this type of research would predict that, given certain circumstances, poverty cannot be escaped, as if free will does not exist. Usually, progressive social science tends to reject the 'cycle of poverty' explanations on the ground that these explanations rely on the psychological concept of 'aspiration' (and thus can be used to blame the victims) and that these explanations usually disregard more general structural reasons, linked to the redistribution of wealth. However, Critical Theory would observe that the unfreedom of the methods serves freedom as it implicitly testifies of the general un-freedom (Adorno, 2019), that is: the implicit determinism of the methods pointing at the cycle of poverty, its fate-like course of events, would also reflect the social determinism that the lack of material resources imposes on disadvantaged part of the population.*

## **Method-Led and Content-Led Research**

The last example helps us to introduce the difference between method-led and content-led research (Benzer, 2011). That example tells us that the approach to methodology must be critical and not dogmatic: Critical Theory favours research driven by the content rather by the method and it would reject the identity of empirical research with method-led research. So, as in the case above, a quantitative approach can be preferred to a qualitative method. In the example above, assumptions based on the understanding of human and social action as in itself coherent and meaningful would not lead us very far. Critical Theory would rather observe that social action can be systematically distorted by powerful material interests (Adorno, 2019; Horkheimer, 2002). Empirical research is needed exactly for this reason.

Thus, content-led research is about empirical research informing concepts that may be already established, whilst developing them in comparison with concrete social reality. It allows the content of social reality (e.g. poverty) to appear in the form of social relations between individuals and groups (for example, exclusion from the production of wealth, the organisation of employment which excludes part of the population etc.). Method-led research is about abstract methodological concerns which are privileged over human interest. The assumption of this approach is the separation between the researcher and social reality. In this case (e.g. poverty) the researcher is not interested in the content of the social issue, he/she just need to report it in a value-free manner.

Thus, Critical Theory invites to content-led research, rather to method-led research (Benzer, 2011).

It is important to emphasise that these critical approaches do not assume that research starts from zero knowledge about the social issue to be researched. As explained above, the mind of the subject is always involved in the dynamics of the object: from a practical point of view, this also means that the



researcher should not forget about her subjectivity. This wider principle is, for instance, taking place in the “co-research methodology” developed in Italy (e.g. Armano, 2020), following the collective enterprise of collective movements. Feminist Research Methodologies and Critical Race Methodology developed principles that overlap the ones above discussed.

## **Critical Thinking Challenge 1**

*What are the methodological implications of this theoretical approach?*

The split between the subject (the knowledge-seeking subject) and object (the content of knowledge to be discovered and determined) has been mentioned. This is an epistemological point that has methodological implications because if there is a clear split between the subject and the object, rather than a dialectic and interactive movement between these two poles, then social knowledge is simply about replicating the object in the mind of the subject. Critical Theory accuses mainstream methodology of aiming at that: simply reproducing the superficial appearance of social reality, of ‘duplicating’ reality without understanding its inner connections (Reitz, 2018). With inner connections, critical theorists mean the active part that subjects (we, the people, collectively or individually) play in the construction of social reality, as much as they are constituted by these social forces (we are not indeterminably free). This dialectic is not symmetrical and social research can determine from issue to issue what is the position and the power of the subjects concerning their environment. Importantly, this is also where qualitative and quantitative research may converge, as the dialectics between subjective creative moments, and their quantitative manifestations need to be explored at each successive step and through the overall picture.

Adorno (2019) would add that the overall picture may not necessarily appear harmonically: contradictions and disharmonies exist at the very heart of modern society and the way it is constituted (Bobka and Braunstein, 2018). On the other hand, mainstream methodology tends to present social reality coherently, eliminating the contradictions that characterise most of the social relations. This critical engagement with the methodology is what set Critical Theory aside from standard methodologies (Jay, 2020). Quantitative data may be used to describe standard, general trends, but critical social research would try to find counter-stories about individuals and groups that do not conform to social pressure, because through this resistance a different idea of social order and justice may emerge. The next section will illustrate exactly two examples of that.

## **Instances and Practices of Critical Theory**

Critical Theory approach to research has similarities with many approaches to empirical research, this section focuses on two: Feminist Research Methodologies because according to their principles, all those involved in the research process are considered active agents in constructing knowledge (e.g. Kelly & Gurr, 2020; Leavy & Harris, 2019) and Critical Race Methodology (e.g. Acevedo-Gil et al., 2019; Solórzano & Yosso, 2002) because of its rigorous focus on counter-story telling and its aim to articulate the voice of the oppressed and the exploited.

## **Feminist Research Methodologies**

There are, of course, a variety of feminist approaches to knowledge and thus research. This section does not want to provide a review of these approaches, but simply to highlight similarities with Critical Theory's understanding of social research. First of all, Feminism emphasizes the empowerment of women and transformation of patriarchal social institutions through research and research results, in the same way, that Critical Theory criticises traditional theory and stresses the importance of a theory linked to emancipatory practice (Reitz, 2018). The other important overlap concerns the challenge to the norm of objectivity of positivism, that assumes that the subject and object of research can be separated from each other and that personal and/or grounded experiences are unscientific (Leavy & Harris, 2019).

Feminism is critical of the main-stream social science approach assumption about the unproblematic nature of "evidence" and data and would reject the statement that "data exist in a one-to-one relationship with the social reality that is being studied" (Fonow & Cook, 2005: 2211; see also: Kelly & Gurr, 2020). However, Critical Theory would differ from post-structuralist feminists who consider observations about social reality a construction, in the sense that the description of social reality in form of a text, produced by the researcher, has its meaning, disjointed from the meanings of the social reality. The critical view of Adorno would maintain social relations of oppression and exploitation are materially real and these can be documented.

The other major point of overlap is about researching developing issues with participants in a way that allows them to oversee the research process (Leavy & Harris, 2019). All those involved in the research process are considered active agents in constructing knowledge, for example in the decolonising methodologies of Darder (2019) and Acevedo et al. (2019). Again, Critical Theory's scholars would be sceptical about turning social science research into a political project, especially if it is done in an unmediated fashion. But they are also critical of the neutrality of the researcher and would have welcomed a renewed conceptuality around agency, whereby the subject of the research is also collective subjects. Dignity represents a key concept in Critical Theory's understanding of social research. Feminist Methodologies move in the same direction insofar as the social conditions of women are concerned.

## **Feminist Geography and 'Fixity Constraint'**

*Despite a preference for voicing directly the experience of women, feminist research shows how the conceptualisation of gender relations can be linked to quantitative research which advances the understanding of specific issues without sacrificing the focus on injustices. So, concepts such as 'fixity constraint' is used in Feminist research (Mei-Po Kwan, 2018): 'fixity constraint' the need to perform activities at a fixed location or time, such as child-care drop-off, and 'time budget constraint', which represents limitations on the amount of time available for daily activities, such as time for housework before or after one's job. This type of research allowed a better understanding of women's everyday lives through measurable data obtained through quantitative research and this is done to highlight gendered differences and inequality (see also: Caretta & Riaño 2016).*

To conclude the review of Feminist Research Methodologies and its overlap with Critical Theory's principles, there is the need to highlight a similarity on their discrimination between content-led research and method-led research: it seems clear that Feminist Research Methodologies does not advance a single specific approach to methodology, nor it advocates specific methods, but it is committed to the substan-

tive area of gender (Leavy & Harris, 2019; Kelly & Gurr, 2020). Like Critical Theory, feminism tries to avoid being sucked in abstract methodological formulations by centring the content of their research project around gender and gender inequality.

## **Critical Race Methodology**

Critical Race Methodology (CRM), as the feminist approach to research, is similar to Critical Theory in focussing not on mainstream approaches, accused of simply providing a ‘master-narrative’, but on the practice side of theory, and focus on a ‘liberatory or transformative solution to racial, gender, and class subordination’ (Solórzano & Yosso, 2002: 22; see also Darder 2019). Research must have content from the outset: a methodology that out of principles excludes content, cannot be included in this overarching research project. This fundamental project of CRM begins by defining race and racism – in the same way as Critical Theory focuses on a theory that is linked with practice, geared in identifying oppression, exploitation and the way out of these (Allen, 2017; Darder 2019). Like the project of classical German Idealism, CRM would happily cease to exist once humanity is freed from racial oppression and discrimination: it is a finite project.

As with feminism and Critical Theory, CRM also rejects notions of ‘neutral’ research or ‘objective’ researchers (Darder 2019). One of its main tasks is negative, in the sense that it aims at exposing and criticising research that silences and distorts the voice and the social realities of ‘minoritised’ communities based on skin colour, accent, religion and other cultural markers: “Critical Race Theory recognizes that the experiential knowledge of people of colour is legitimate, appropriate, and critical to understanding, analysing, and teaching about racial subordination” (Solórzano & Yosso, 2002: 26)

It is though important to discuss CRM here because of a particular method that has been devised by their researchers: counter-story telling (Allen, 2017).

What is counter storytelling? Solórzano and Yosso (2002: 32) give us a simple definition: ‘We define the counter-story as a method of telling the stories of those people whose experiences are not often told (i.e., those on the margins of society).’ This method has been used in education research, it is similar to narrative-interviews, but it includes the critique of bias representations of reality from the outset: it assumes the pervasive presence of a ‘master narrative’ produced by powerful elites which hide privilege and frame people from the different ethnic background as non-subjects (Haywood, 2017).

### **Example 3: What Is a Good Neighbourhood?**

*An example of this matter narrative is when US American white middle-class people fall victim to violence in their neighbourhoods and their schools, the shock comes from the standard story: ‘How could this happen? This is a good neighbourhood’ or ‘We never thought this could happen here. This is a good school.’ Whereby, if the same happens in the ‘minoritised’ neighbourhood, then the master narrative would frame these communities as violence-ridden communities, it would ascribe lawlessness and lack of civility as part of their nature (Solórzano and Yosso, 2002: 29).*

There is a double function of this approach: on the one hand, it challenges the dominant ideology in the sense that develops a research programme that is explicitly in opposition with the master-narrative. On the other hand, bear witness of the traditions and the experiences and struggles of ‘minoritised’ classes. This referring back to ‘minoritised’ and neglected traditions is a fundamental contribution of

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CRM, which develops further feminist accounts of ‘silenced’ voices and provide a positive turn to the critique of ideology (Darder, 2019).

This approach is further articulated by the methodological approach devised by Delgado Bernal (2016). As a way to be open and receptive to counter-story telling, Bernal assumes and encourage ‘cultural intuition’, which is about using one’s personal experience as well as a collective experience and community memory in formulating the research issues. Cultural intuition is like the concept of ‘theoretical sensitivity’ used by Grounded Theory Methodology (see chapter 9 in this book). Postulating collective memory in devising and practising the research process opens the possibility for members of the oppressed group to engage with the research process (Acevedo-Gil et al., 2019).

Thus, as in Critical Theory, there is no *tabula rasa* at the beginning of the research process. The counter-story telling can then assume a precise form, which can make use of four sources: ‘(a) the data gathered from the research process itself, (b) the existing literature on the topic(s), (c) our own [the researchers] professional experiences, and (d) our own [the researchers as minoritized people] personal experiences.’ (Solórzano & Yosso, 2002: 34). The sources (b) and (c) can be translated in Critical Theory’s tenet that the theoretical material always precedes and accompanies the research process and that the subject is always involved in the research of the social issue.

This last point may well be exemplified by the concept of ‘racialisation’: racialisation is a social process of domination through which powerful elites frame a certain group of people as racially different through the arbitrary use of markers (e.g. skin colour, accent). Thus, researchers and subjects who have been through the process of racialisation can use (c) and (d) above to make sense of that social process, capture the master narrative which underpins it and collect counter stories from other people who have been ‘racialised’ (Darder, 2019).

### **Example 4: Counter-Story Telling in the Education Field**

*Solórzano and Yosso (2002: 35) offer examples of counter-story telling. They refer to their research in the education field and their multi-method approach: ethnographic fieldwork, observation and discussions with participants of specific groups and narrative interviews, but also the reflexive position of the researchers and the members of the minoritised groups were mobilised to produce a theoretically grounded explanation. Moreover, previous studies, secondary data, critical views and even cultural production of that specific group (like poetry!) also came in aiding of their articulation of counter-stories. The outcome of this research process was the creation of counter-stories which assumed the form of storylines and narratives which would reflect the complexity of marginalisation in mainstream education.*

In sum, counter-story telling can either take a literary or even fiction-form (it can even be the use of poetry) or can take a ‘standard’ form of qualitative data in form of text which are then interpreted and systematised by the researcher, who, through personal or collective experience has become part of a tradition which stands against oppression.

## **Methods Used in Critical Theory Research**

Following the previous sections, it is important to state again that Critical Theory in methodology and methods does not follow a mainstream approach to empirical research. Indeed, Critical Theory resists and some cases subvert standard quantitative and qualitative research. It is also the case to mention that

critical social research represents the struggle of critical social scientists who are plighted from lack of resources (that is money) for doing research. It is not a secret for anyone that money for research is preserved for researchers aligned to mainstream academia and approved research programmes. On that, Critical Theory offers a dialectical way out of institutional marginalisation for research programmes that are committed to unmasking injustice and exploitation.

Thus, following the need to say *something* about the conditions of exploited people, Critical Theory is and must be eclectic concerning techniques and methods of data collection. The main point is that methodology cannot silence critical research and critical reflection on an unjust state of social issues. So, empirical studies can “include the whole gamut of research tools: observations, semi-structured, unstructured and in-depth interviewing; key informants testimonies, analysis of personal and institutional documents; mass-media analysis; archive searching; official statistics and reviews of published literature, ethnography and auto-ethnography, historical reconstruction, action research and semiological analysis” (Harvey, 1990: 196 – see also Jay, 2020). All of the above could be part of the critical research approach to data collection and data analysis.

Critical Theory, and the other independently connected strands in social critical research, would then encourage the researcher a bold attitude in fashioning her/his project, making full use of the ‘sociological imagination’, and not being afraid to challenge dominant paradigms. At the same time, Critical Theory and others (Feminist Methodologies and CRM) maintain that this challenge should be carried forward rigorously, revaluing the concept of ‘objectivity’ as seen above, as a dialectical relationship between the mind of the researcher and the social issues researched. This is the main reason why sometimes these approaches (CRM, feminist and critical approaches to research) are not considered ‘scientific’. However, scientific neutrality and pure knowledge of facts are simply epistemologically impossible (Bobka & Braunstein, 2018).

Rather than describing a series of prescriptions about how to do Critical Theory-inspired empirical research, underneath a case study is discussed, as a way of illustrating some of the features of content-led research.

### **Case Study: Mario Payeras, Writer and Leader of a Revolutionary Guerrilla Group**

*Sergio Tischler’s monograph (2009) on the political sociology of Guatemala represents a good example of Critical Theory research in action. As methods of inquiry, Tischler used: the semiotic analysis of novels of Mario Payeras, a Guatemalan writer who was also a leader of a revolutionary guerrilla group; the analysis of documents publicly available for the period in question (from the 1960s to the 1980s); his own experience of being born and raised in Guatemala (so, auto-ethnography).*

*The monograph is about the internal contradictions of this revolutionary guerrilla group, the feeling and the reflections of Mario Pareyas, as a novelist and as a political leader, and the different social context of the political struggle: in the countryside and the city. Tischler shows how the guerrilla movement failed, and the reasons why it failed. Through the novels and memoirs of Pareyas, he also shows how the subjectivities of people involved in the struggle change over time. Finally, Tischler shows how Guatemalan society is still moving towards changes through the organisation of ordinary people, rather than professional revolutionary militias.*

## **Critical Theory in Research**

*Tischler is not interested in studying that part of Guatemalan society and history from a neutral standpoint, he does not seek to come up with an impartial account of class inequalities in his country (see also: Acevedo-Gil et al., 2019). As a critical theorist, Tischler (2009) wanted to depict social objectivity as antagonism and possibility of transformation (p. 29). So, Critical Theory argues for a very different concept of objectivity.*

Critical Theory never starts from zero, from a blank sheet, it always starts from concrete situations of struggle and injustice. This approach is very evident in the case study reported above. In his study, Tischler (2009) goes as far as posting the theoretical concept of value-form at the beginning of his study (p. 25) and postulating the rupture of time itself for the understanding of revolutionary activities of Mario Payeras and his group. Let's unpack these points: without going into its technicality, the use of the concept of value-form (which is taken from Critical Theory studies) signifies taking a position in what is important for a society in a given moment: the production of useful things, the production of our livelihood. What it counts here is that the critical theorist, in her or his research project, can start from an established concept that would make sense of her or his 'cultural intuition' – as in CRM (Allen, 2017). Similar, and linked to this acquired theoretical sensitivity, the 'concept of time' is positioned in a way to make sense of the 'experience of time' which is changing during intense phases of social struggles. This conception is both a product of the research itself and its presupposition.

So, in this case, study, the above-mentioned concepts (value-form and the different experience of time) are both acquired from previous studies (Vedda, 2013) and the intellectual experience of the researcher. What is important to take from this case study is that the researcher who intends to practice critical empirical research can continuously refer back to theories that make sense subjectively and also make sense in the light of the data collected during the period of research (see also Acevedo-Gil et al., 2019).

This qualitative research offers the possibility of collecting 'images' that capture the 'objectivity' confronting the subjects of this history. The 'images' he captures are the counter-narratives, as in CRM. Images that make possible to understand the social antagonism of Guatemala in that period, the political struggle of the Mario Payeras' revolutionary group, why they failed and why this failure is not the last word for a struggle for a more just society.

## **CONCLUSION**

One of the main reasons for suggesting Critical Theory as a methodological approach to social science is that it offers sophisticated tools for those who are cut out from 'resources' and large research grants. On that, Critical Theory represents the 'cunny' of the reason for developing a critique of social reality for and with those who are less privileged. This does not mean that 'anything goes', in terms of methods used to gather data. Rather, Critical Theory would oppose any orthodoxy in the methodology where a supposed lack of correct research methods would not allow the less privileged to 'speak'.

The preference for content-led research means that critical researchers are free to design the most appropriate research method to conduct an enquiry appropriate to the object or the issue that is vital to be explored. This procedure may be subjective, but the preoccupation of Critical Theory is about devising a theory which is embedded in empirical material (Adorno, 2019). The insistence on the primacy of the issue itself (Cook, 2011) aims at using all the methods at the researcher's disposal to collect data and then reflect *through* the data, rather than *on* the data.

The strength of critical approach (in the sense delineated in this chapter) for empirical research is that allows the individual researcher to take advantage of her/his own intellectual experience: it is not just about a body of literature, from the Frankfurt School to Feminist Methodologies and to CRM, that has developed critical categories and set ways of confronting social issues. It is about a live approach which is determined to resist 'the wrong state of things' (Bobka & Braunstein, 2018) and needs to be articulated in the concrete intellectual actions of the researchers.

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## **KEY TERMS AND DEFINITIONS**

**Content-Led Research:** It happens when empirical research informs concepts that are already established, and the researcher develops them in comparison with concrete social reality. It allows the theory to be specific and to further articulate its concepts. It allows the content of social reality to appear in the form of social relations between individuals and groups.



**Critique:** The faculty of our mind to resist the appearance of reality. Research should not simply duplicate reality, it should be able to find out how this reality rests on social relations that are exploitative or unjust.

**Method-Led Research:** It happens when methodological concerns take over the human interest regarding the content of a specific social issue. With this approach, the fundamental thing is to have a method that is a neutral vis-à-vis social reality and that it may be capable to duplicate reality, rather than show its internal contradictions and its spaces for struggle.

**Positivism:** An approach to the study of social science which privilege facts, narrowly defined empirical evidence and systematically defined methodology. It tends to isolate social facts, disregarding their connections, at the expenses of social relations.

**Reification:** A social tendency transforming social relations in relations between things; through this phenomenon, human activity is valued not for the relations it establishes but only for the visible and measurable effects it produces.

**Theory:** Here ‘theory’ means something different from the traditional concept and usage of theory: it is not about a set of abstract concepts. The theory is connected to practice and concepts are derived from a state of things that need to be ‘put right’.

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## Chapter 2

# Systematic Review as a Research Method in Library and Information Science

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### **ABSTRACT**

*The aim of this chapter is to assess the current state of application of systematic reviews (SRs) in library and information science (LIS) field and determine how information scientists can advance the SRs as a methodology. The literature shows that there is an increasing number of SRs in LIS although there are still knowledge gaps about the use of SRs as a methodology. The quality of reporting in primary studies in LIS is still poor, and hence, it becomes difficult to appraise the value of the study undertaken. In order to advance the use of SRs in LIS domain, it is important to introduce SRs in LIS education curricular, integrate SRs as part of the continuing scientist development programmes (CPD), use automated SR software to minimize workload, introduce SRs a formal role and service in the libraries, collaborate with research teams as co-authors to conduct SRs not only in the topics defined by research teams, but also in LIS topics, and create SR databases and tools in LIS.*

### **INTRODUCTION**

The rapid advancements of information and communication technologies (ICTs) have resulted in an exponential increase in the amount of available information and forced librarians to change their practices. The increasing popularity of ICTs, new ways of communicating research and the transformation in scientific publishing have also posed new challenges for librarians. Information scientists need to rethink and redefine their role in terms of addressing users' needs and thus use advanced technological skills (Vassilakaki & Moniarou-Papaconstantinou, 2014). Systematic reviews (SRs) are increasingly being

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produced and published (Chasin & Scholta, 2015). There has been a sharp rise in the publication of SRs due to the increased call for evidence-based research; high publication rate of primary studies, growing number of scientist organizations promoting SRs, and high number of tools available to conduct review (Foster & Foster, 2015). The upsurge in reviews has led to more researchers seeking the assistance of librarians (Foster & Foster, 2015). According to Xu, Kang and Song, (2015), all primary research must be preceded by a SR. SR is defined as a systematic way of collecting, critically evaluating, integrating, and presenting findings from across multiple research studies on a research question or topic of interest (Pati *et al.*, 2018).

SRs help information scientists to keep up-to-date with scientific information since they combine information from several existing publications on a given topic (Don, Cnor & Faan, 2016). As information scientists, library staff could act in a more entrepreneurial style and seek out ways to add value to their roles and show the impact of their work and to do so they must go beyond the traditional parameters of the library. They need to respond more acutely to their users' needs, and develop capabilities to build better profiles of their users, for example through continual needs analysis (Delaney & Bates, 2015). Therefore, SRs provides several opportunities to librarians such as potential income, increased use of library services, research output, and alignment with the new roles of academic libraries (Gore & Jones, 2015).

Information scientists are more and more appealed to participate in the production of SRs (Gore & Jones, 2015). The information scientist are urged to participate in SRs due to the ever-increasing volume of digital information and the constant development of tools to generate and access information require information scientists to operate as information consultants and facilitators (Vassilakaki & Moniarou-Papaconstantinou, 2014). Furthermore, Information scientists need to reconsider their role in the learning process at higher levels due to increased competition among universities for developing successful graduates, hiring prominent academics and finding research funds, skills development, and the adoption of changes in the learning and research organizations (Vassilakaki & Moniarou-Papaconstantinou, 2014).

SRs have often been mainly associated with the field of health science (Don *et al.*, 2016). Health sciences librarians have been involved with SRs since this genre of publication emerged during the 1990s. Since then, librarians have been most widely known for their prowess in searching for the evidence needed to create SRs. Even during the early years, however, librarians and other information scientists were involved in other aspects of the SR process (Spencer & Eldredge, 2018). Further, the first books on the reviews were published by researchers in the field of education, social sciences, and political science (Xu, Kang and Song, 2015; Trudel *et al.*, 2015; Petticrew, 2001). However, SRs are gaining their prominence in other fields as well, including astronomy to zoology, library and information studies and information systems.

A generally known role of information scientists in SRs is information retrieval methods because of their skills in finding and managing information. Nevertheless, information scientists can be involved in other roles of SRs. Since information scientists are more and more involved in SRs, they need to have a better understanding of what SRs are. The following are the objectives of this chapter:

- a) To discuss SRs as a research method including typologies/types of SRs and steps for conducting SRs
- b) To highlight the current state of SRs in LIS
- c) To review how information scientists advance Information retrieval practices for SRs.

## OVERVIEW OF SYSTEMATIC REVIEWS

SRs emerged in the late 1970s and early 1980s in response to calls from the ‘evidence-based medicine movement’. This movement aimed to bridge the gap between the best evidence from research and optimal decision making by organizing the available knowledge about the effectiveness of health care interventions into usable and reliable formats (Mulrow, 1994). According to Carr, (2002) SRs provide a research method for conducting literature reviews according to a set of procedures – systematically – and for synthesizing existing results on a research problem or a research question. Therefore, SR allows the researcher to review and assess knowledge in important areas. Such a review of knowledge can be applied effectively to improve practice; thus, SR also facilitates evidence-based practice. In addition, SRs provide a method for creating the often missing link between research and practice. Ultimately, SR serves to inform by drawing from a body of literature and summarizing the results (Ankem, 2008; Knoll et al., 2017; Xiao & Watson, 2017).

SRs present a comprehensive summary of research-based knowledge that can aid both practitioners and policy makers in decision making (Wilson, 2016). SRs are, in simple terms, studies of studies, which form a sub-category of research syntheses. SRs aim to locate all studies on a particular topic, intervention, or research question so that evidence can be synthesized and analyzed (Wilson, 2016). As such, they require systematically and comprehensively searching the literature and then documenting the search strategy for replicability and to allow the synthesis to be updated (Gore & Jones, 2015).

Further, Pati *et al.*, (2018) clarified SRs as a method that address concerns regarding quality issues, such as bias, replicability and credibility. SR method provides a way to assess the quality level and magnitude of existing evidence on a question or topic of interest. SR as a rigorous and thorough research method with a transparent and reproducible process, which includes establishment of specific research question; formulation of inclusion/exclusion criteria; a rigorous reproducible and transparent retrieval process; and quality assessment of included studies, as well as data extraction, synthesis, analysis, and presentation (Xu, Kang & Song 2015). The aim of this transparent and reproducible process is to remove the influence of personal bias on the part of the reviewer and to ensure consistency and objectivity. The terminology used to describe specific systematic approaches and variations in methods of synthesis for different types of SRs has evolved over time and varies between fields, groups of researchers, and authors (Trudel et al., 2015).

There are various types of literature reviews that exist; Trudel *et al.*, (2015) identified nine literature review types which are; narrative review, descriptive reviews, scoping reviews, meta-analyses, qualitative SRs, umbrella reviews, theoretical review, realist reviews and critical review. Moreover, Grant, Booth and Centre (2009) also identified common review types which are; critical review literature, literature review mapping, mapping review/ systematic map, meta-analysis, mixed studies review/mixed methods review, overview, qualitative SR/qualitative evidence synthesis, rapid review scoping review, state-of-the-art review, SR, systematic search and review, systemized review and umbrella review. However, According to Martín-Rodero, (2016) there are several models of reviews that differ considerably in terms of fundamental objectives, motivations and means by which they are held. It is therefore important to understand different types of reviews before embarking on conducting the review. This will enable researchers to use appropriate research methods to answer their specific research questions.

## **STEPS FOR CONDUCTING SYSTEMATIC REVIEWS**

SRs adhere to standardized methodologies/guidelines in systematic searching, filtering, reviewing, critiquing, interpreting, synthesizing, and reporting of findings from multiple publications on a topic/domain of interest. It attempts to capture the broadest set of available literature on the topic of interest. After assessing the quality of individual studies, SRs may eliminate low-quality studies from further consideration. Furthermore, due to extensive documentation and reporting of steps and assumptions, SR renders itself open to replication. It demands a team effort (at least two) to eliminate bias, among other issues. SRs are inherently time intensive (Pati et al., 2018). The following are key steps in conducting SRs;

### **Formulation of a Research Question**

First stage involves defining the review question, forming hypotheses, and developing a review title. It is often best to keep titles as short and descriptive as possible. A well-formulated question for a LIS topic would likely include a description of who was involved, what was being studied, the outcomes in which one is interested, and what studies or data to collect and combine. Once the question is complete, the review process moves on to identifying potential studies or data sources (Mckibbin, 2006). In order to ask a clear focused research question, it is important to break the question down into constituent parts using several frameworks. For example, in health sciences, the prominent framework is known as PICO, which stands for **P**articipants, **I**ntervention, **C**omparator, and **O**utcomes (Knoll et al., 2017). PICO is also common, where the “S” refers to the Study design, thus limiting the number of irrelevant articles during searching (Methley, Campbell, Chew-Graham, McNally, & Cheraghi-Sohi, 2014). PICO (with a lowercase o) can be equally useful for qualitative SRs. The core elements of PICO are: Population, Phenomenon of Interest, and Context (Stern & Jordan, 2014). SPICE framework can also be relevant for qualitative research questions, and this includes: Setting (Where? in what context?), Population or Perspective (For whom?), Intervention (What?), Comparison (What else?), Evaluation (How well? What result?). Another useful framework in social science can be “SPIDER” (sample, phenomenon of interest, design, evaluation, research type). SPIDER is designed specifically to identify relevant qualitative and mixed-method studies (Cooke, Smith, & Booth, 2012). Therefore, LIS researchers can choose either to use PICO for quantitative studies or SPICE or SPIDER or PICO for qualitative studies when developing their research questions.

### **Protocol Development and Training to the Review Team Members**

For any review that employs more than one reviewer, it is critical that the reviewers be completely clear and in agreement about the detailed procedure to be followed. This requires both a written, detailed protocol document, and training for all reviewers to ensure consistency in the execution of the review (Okoli & Schabram, 2010). In actual sense, a typical SR must have a protocol that includes the research question, the methods to be used to answer, types of studies and designs that the reviewer intends to locate, how they will be located, evaluated and finally synthesized (Ferrerias-Fernández, Martín-Rodero, García-Peñalvo, & Merlo-Vega, 2016). The protocol needs to be registered in a database, such as PROSPERO, or the Cochrane Library for health sciences, or Campbell collaborations for social sciences, and CADIMA for multidisciplinary SR. These databases assist in minimizing publication bias and selective

outcome reporting by giving a permanent record of the a prior methods (Knoll et al., 2017). Protocol registrations also minimizes duplication of research efforts due to the availability of ongoing review.

## **Select Databases**

It is essential to know the sources of information available for efficient information retrieval (Martírodero, 2016). It is important to identify and select database sources that are relevant to the research question. Literature search for SR must involve well-structured databases, less structured databases, grey literature, and hand searching. Mckibbon (2006), and Xu, Kang and Song, (2015) summarized the following well-structured bibliographic databases in different disciplines: 1. Health sciences (for example, PUBMED, EMBASE, MEDLINE, EMBASE, Cumulated Index to Nursing and Allied Health Literature [CINAHL], British Nursing Index, Allied and Complementary Medicine Database [AMED], HealthSTAR, PsycINFO). 2. Science (for example, Science Citation Index). 3. Social Science (for example, Social Science Citation Index, Applied Social Science Index and Abstracts (ASSIA). 4. Information Science (for example, Library and Information Science Abstracts [LISA], LISTA, Information Service for Physics, Electronics, and Computing [INSPEC]). 5. Educational literature (e.g. ERIC); Agriculture (CAB abstracts); 6. Multidisciplinary bibliographic databases (Proquest, ISI's Web of Knowledge, EBSCO, and Scopus). Less structured databases can be added to the SR depending on the relevance of the topic. These databases can include LILACS, SCIELO etc.

Apart from online databases, grey literature is important in SR to minimize publication bias. Grey literature include publications/documents published in electronic and print formats not controlled by commercial publishing (Knoll et al., 2017). Grey literature includes: dissertations, theses, conference abstracts and proceedings, and technical reports, working papers, and unpublished or ongoing studies etc. Further, researchers can conduct hand-searching to identify missing documents. Hand searching is the manual searching of journals and conference proceedings that are not fully indexed in searched databases. Researchers can augment searches with google scholar and Microsoft academic search. Research shows that Google Scholar is a good search engine to search and retrieve much grey literature and specific, known studies, however it should not be used alone for SR searches. Haddaway *et al.*, (2015) found a moderate/poor overlap in results when similar search strings were used in Web of Science and GS (10–67%), and that GS missed some important literature in five of six case studies.

## **Develop Search Strategy**

The search strategy should be based on the elements of the review question with the study design that is considered most appropriate in order to identify all relevant literature in an area. This involves determining the location (where) and terminology (how) that will be used in the search. The key in developing an optimal search strategy is to balance sensitivity (retrieving a high proportion of relevant studies) with specificity (retrieving a low proportion of irrelevant studies). An effective search strategy must comprise descriptors and their respective qualifiers or descriptors and keywords combined together by the most appropriate Boolean operators (Ferrerias-Fernández et al., 2016). The search strategy must be reported transparently in the protocol and in the review (Knoll et al., 2017). Further, the search strategy for each database has to be documented including the dates, search limits, and total number of documents found in each database. They can be attached as appendices or supplementary materials with the published SR.

## **Conduct Literature Search**

Comprehensive searching also can include hand searching of specific journal titles using the predefined criteria. Searching is often done in two phases. In the first phase, the goal of the search is to identify published narrative and SRs. If a relevant SR is already available, the project could end. If the identified review is on target but older, the research team can build upon the older review and choose not to include studies from it in the newer one, that is, produce an update rather than a complete review. If the reviews retrieved are not exactly on target, they can, at least, provide insight into search terms and database selection as well as potential citations for inclusion in the new review. After searching for published reviews, the searching proceeds to identify potential original studies. These studies come from three main sources: primary searches in established databases and hand searches of specific journal titles; personal knowledge (team members' reprint files) and personal contact with peers and experts in the field; and "snowballing," whereby the team members find potential citations in bibliographies of reviews and original studies as well as perform citation tracking of important and older studies using resources such as Science Citation Index, Social Science Citation Index, and Arts and Humanities Citation Index. The database and hand-searching procedures are set before the study starts (preplanned) and the "snowball" accumulation occurs as the study progresses. After the predefined searching is finished, citations are downloaded, combined into one list with duplicates removed, and sorted for easy screening by members of the team.

## **Define Eligibility Criteria**

The Cochrane acronym PICO (or PICOC), which stands for population, intervention, comparison, outcomes (and context), or SPICE or SPIDER, can be useful to ensure that one decides on all key components prior to starting the review. It is also critical to operationally define what types of studies to include and exclude (e.g., randomized controlled trials, quasi-experimental designs, survey, qualitative research), the minimum number of participants in each group, published versus unpublished studies, and language restrictions. For Cochrane Reviews or Campbell Collaborations, or other protocol registration databases (such as Prospero), this information gets prepared, peer-reviewed, and published in a Protocol format first, which is then replaced with the full Review once it is completed (Uman, 2011).

## **Title, Abstract and Full-text Screening**

Screening including title review, abstract review and full text screening requires that the reviewer be explicit about what studies were considered for review, and which ones were eliminated without further examination (a very necessary part of any literature review). For excluded studies, the reviewer must state what were the practical reasons for their non-consideration, and justify how the resulting review can still be comprehensive given the practical exclusion criteria (Okoli & Schabram, 2010). Usually the screening process will start with the title/abstract screening, which is followed by full-text screening. Both processes must be performed independently by (at least) two reviewers. In case of any disagreements, a third independent reviewer can be consulted for resolving conflicts (Knoll et al., 2017). The decisions to whether include or exclude a publication at the full-text screening are rather definitive. Therefore, the reviewer must document all reasons for the exclusions. The search process and the final number of included and excluded studies (with the reason for exclusion) must be documented in the Preferred

Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram (Moher, Liberati, Tetzlaff, Altman, & Group, 2009).

## **Critical Review**

Once one has have the list of final included articles, one needs to conduct in-depth critical review of each article. Extract all relevant information from each article and insert in the appropriate place in the Excel document. As part of the critical review, one need to rate the level of quality of evidence for each article using the framework one has adopted for their study (Pati et al., 2018). Librarians can use the Report formula and checklist items appropriate in LIS (Xu, Kang, & Song, 2015b). This checklist provides guidance for LIS researchers to better structure their SR, ensure methodological quality, transparency and comprehensive SR process. However, this should not limit use of other existing guidelines, since librarians/information scientists may be working with other research across other disciplines. In such circumstances, librarians can use guidelines, such as the *National Health Service (NHS) Centre for reviews and dissemination framework* (Centre for Reviews and Dissemination Systematic reviews, 2009), or the *Cochrane collaboration's reviewer's handbook* (Cochrane Collaboration, 2018).

## **Data Extraction**

It can be helpful to create and use a simple data extraction form or table to organize the information extracted from each reviewed study. The data extraction form must include entries for study characteristics, together with relevant results and findings from quality assessment or critical appraisal. Data extraction by at least two reviewers is important again for establishing inter-rater reliability and avoiding data entry errors (Uman, 2011). It is important to pilot the data extraction for two or three studies (Knoll et al., 2017).

## **Data Synthesis/Analysis**

Data synthesis involves collecting and summarizing the findings of the included individual studies. The included studies can be integrated quantitatively using statistical methods (meta-analysis) and / or qualitatively systematically describing, tabulating and integrating the results. In the first stage, the data synthesis involves mapping the main components of literature, which tabulate the results to identify how many studies met the inclusion criteria, who were their authors, etc. (Martín-Rodero, 2016). Another step is to detect the important topics, etc. Finally, is to “review the literature in depth and explore the quality of the works according to the fulfillment of the objectives pursued in the research questions and highlight the deficiencies in the literature” (Ferrerias-Fernández et al., 2016). These three steps are important when conducting SR.

## **Manuscript Writing**

In addition to the standard principles to be followed in writing research articles, the process of a systematic literature review needs to be reported in sufficient detail that the results of the review can be independently reproduced (Okoli & Schabram, 2010).



## **Automated SR Tools**

Automated tools and software such as reference management software can assist librarians to export search results from the online databases into the reference managers, and conduct de-duplication, and thus reduce the workload. Example of these software include open source tools (e.g. Mendeley, Zotero) and commercial packages such as endnote etc. Further, there are open source online tools, such as CADIMA that can facilitate reporting of all activities to maximise methodological rigour (Kohl et al., 2018). CADIMA supports the following SR activities: protocol development, management and de-duplication of search results, manage and conduct study selection, offline/online data extraction, and critical appraisal processes (Kohl et al., 2018). There are other available tools that can support different SR activities, which include: Abstrackr, Covidence, DistillerSR, Eppi-Reviewer 4, EROS, ExaCT, Rayyan, RevMan HAL, SUMARI, and TrialState SRS 4.0 (Knoll et al., 2017). There is also a wide range of tools and software that can provide support to the SR process from the initial stages of protocol to data syntheses and writing, which can be found at the SRtoolbox website (<http://systematicreviewtools.com/>).

## **THE CURRENT STATE OF SR IN LIS**

There are several attempts to propose the adoption of SR as a methodology for discovering, analyzing, and appraising the relevant literature in LIS (Ferrerias-Fernández et al., 2016; Gore & Jones, 2015). For instance, Ferrerias-Fernández et al. (2016) noted the small number of SR in LIS and proposed the adoption of SR to enhance availability of evidence for practicing librarians, quality and reproducibility of research results in LIS. Ferrerias-Fernández et al. (2016) also emphasized the need to have a detailed documentation of the processes involved in search and screening of located articles and documents to enhance the methodological quality of SR. Gore and Jones (2016) emphasized that SR is increasingly becoming a new form of research in LIS, therefore library administrators need to create a conducive environment in libraries for SR methods to be effective.

Despite its importance, few SR of reviews that have reviewed the current state of methodological application of SR in LIS (Ankem, 2008; Koufogiannakis, 2012; Xu et al., 2015b). Ankem (2008) reviewed seven SRs and five meta- analyses that were published between 1996 and 2006 in LIS journals. Ankem (2008) found that most of the applied SR methods were comprehensive, which included identification of studies, inclusion/exclusion criteria, quality assessment, and data extraction. However, in most SRs, the analysis is limited to percentages rather than inferential statistics (Ankem, 2008). Koufogiannakis (2012) developed a wiki that comprised 37 SRs in the LIS domain published between 1997 and 2012. Koufogiannakis (2012) noted the small number of SRs in the field. Xu, Kang, and Song (2015) reviewed 50 SR in LIS and found that the quantity and the methodological quality of these SRs were still low. Noting that there is no established criteria for assessing the quality and process guidelines of studies on SR in LIS, Xu, Kang, and Song (2015) proposed a Report formula and checklist items that is appropriate for LIS. It is clear that there is an increasing number of SR in LIS although numbers are still small compared to those from fields such as medicine and psychology, whose total number of publications may reach more than one hundred studies in recent years. Therefore, SR is still a relatively unknown method in the LIS discipline.

Similarly, there are few meta-analyses in the LIS domain. While SR focuses on answering a defined research question by collecting and synthesizing empirical evidence based on pre-defined inclusion/

exclusion criteria, meta-analysis is a statistical technique to combine the findings from independent studies. Meta-analysis can be applied as statistical strategy to analyze data in SR. Ke and Cheng (2015) found a low use of meta-analysis technique in LIS research. An informed understanding of the role of SR and meta-analysis methods in LIS will be helpful to improve LIS research.

In terms of settings, most LIS reviews were conducted in developed countries, with very few reviews from developing countries, and especially sub-Saharan Africa. Xu, Kang, and Song (2015) found that most SR in LIS were conducted in North America, followed by United Kingdom. Countries such as Australia, Ireland, Germany, New Zealand, South Africa, and China each contributed one review (Xu et al., 2015b). It is clear that there is lack of knowledge concerning the importance of conducting SR in the LIS discipline in most developing countries.

Medical librarianship was among the early fields to embrace SR research method. Later on, it extended to other non-clinical settings, including academic libraries and LIS schools. An earlier review showed that all seven reviewed SRs in LIS had been published on medical library or medical information topics (Ankem, 2008). Koufogiannakis (2012) also found that 64% of LIS SRs were focused on health sciences librarianship. A recent SR of reviews shows that about thirty-two out of fifty LIS's SRs were undertaken in clinical settings (clinical practice), while other studies were done in LIS schools or academia libraries (Xu et al., 2015b). In particular, these LIS SR focused mainly on the following: 1) feasibility of or introduction to SR in LIS, and 2) detailed application and execution (Xu et al., 2015b). A content analysis of 35 meta-analyses revealed that studies primarily focused on five fields: information systems, human computer interaction, library reference services, informetrics, and information resource management (Ke & Cheng, 2015). These studies show that there is an increasing adoption of SR research method in the LIS domain, although the SR publications are still small. It is therefore important to build capacity of librarians and information scientists to conduct SR in different domains of LIS.

In terms of SR key components, literature shows that the quality of reporting in SR is still weak. In a review of SRs of LIS, Xu et al. (2015) found that the quality of reporting in primary studies was poor, and hence it becomes difficult to appraise the value of the study undertaken. Further, the reviewed studies rarely included the following: research question descriptions, provision of full search strategy for at least one database, supplementary research strategies, publication bias, numbers of reviewers, data extraction form, flow diagram, and research period (Xu et al., 2015b). Similarly, a content analysis of meta-analyses revealed that there are still weaknesses in the quality control of meta-analysis in the LIS literature (Ke & Cheng, 2015). Publication bias was not a problem because LIS researchers were competent in information searching, however, the journal article is still the main literature type for meta-analysis studies (Ke & Cheng, 2015). It is clear that we need to improve the quality of SR research method in LIS discipline.

SR may not be a common practice in LIS due to limited details on the research method, deficiency of rigorous processes, and replicable review (Koufogiannakis & Crumley, 2006). Other common barriers include: funding, time, experience, support, access to research and search issues (Koufogiannakis & Crumley, 2006; Xu et al., 2015b), lack of skills in some aspects of SR (Spencer & Eldredge, 2018), and assessment of study quality (Xu et al., 2015b). Some of these challenges are easier to overcome, while others need consideration to move innovation and evidence-based librarianship forward.

On the whole, the lack of SRs in the LIS domain is due to the limited amount of methodological details and lack of rigorous processes, explicit and replicable review, as they point (Koufogiannakis & Crumley, 2006; Xu et al., 2015b). Despite the fact that SR is now being applied in other fields of LIS apart from medical librarianship, there are barriers that one needs to overcome. Although SR can be one of the methods to uncover potential solutions to these challenges, there is still a need to create

more awareness and build capacity of the LIS scientists to tackle some of the challenges. Therefore, the subsequent sections uncover how information scientists can play a key role in SR, and they can advance the SR research methods.

## **HOW CAN INFORMATION SCIENTISTS ADVANCE SR?**

Information scientists/librarians can play a key role in advancing the SR research methods. In this chapter, we propose six ways in which librarians can conduct and advance SR to enhance availability of high-quality evidence in the LIS domain and other disciplines.

First of all, SR has to be formally introduced at the LIS education curricular, as part of the research methods courses at various education levels for SR. One of the key reason why SR is not a common practice in the LIS domain, is due to the lack of knowledge on how to conduct SR as acknowledged by several scholars (Ankem, 2008; Koufogiannakis, 2012; Xu et al., 2015b). This action will enable LIS students to become competent in conducting SR when they become practitioners.

Literature showed that SR is still not common in most developing countries (Xu et al., 2015b). Librarians need to introduce SR as formal service and a new role in their library services. The librarians' role now goes beyond information search and retrieval, and therefore they should be involved in SR as co-authors, and not only as research synthesis assistants. First, as a new role, librarians/information scientists should play a key role in conducting SR in the LIS domain. This effort will enhance the development and advancement of SR methodologies, especially in areas where librarians have strength such as information search and retrieval. To enhance the methodological quality and rigour in SR, librarians can use the Report formula and checklist items appropriate in LIS (Xu et al., 2015b).

Further, librarians can collaborate with research teams as co-authors to conduct SR. This collaboration between librarians and researchers can improve the quality of search and reporting. Rethlefsen et al. (2015) found that the involvement of librarians or information specialists as co-authors was correlated with significantly higher quality of reported search techniques. SR that involve librarians have good quality of searches especially when the librarians have either acquired skills through received training or past experience (Koffel, 2015).

In collaboration with the research teams, the librarian's expertise is helpful at different stages of the review from the initial phase of the review to its publication. A recent scoping review highlights 18 different roles filled by librarians and other information scientists in conducting SR (Spencer & Eldredge, 2018). The librarians' core roles include searching, source selection, and evaluation, whereas less documented roles were planning, question formulation, and peer review (Spencer & Eldredge, 2018). Other roles include: teaching, citation management, collaboration, de-duplication of search results, Indexing of database terms, reporting and documentation (e.g. writing the methodology, and creating a flow diagram of the article selection process) (Spencer & Eldredge, 2018). Other scholars also added other roles, which include data abstraction, data extraction, bias assessment, critical appraisal, data synthesis, document supply, report writing (Bath, Beverley, & Booth, 2003; Harris, 2005). It is therefore imperative to engage librarians in SR as co-authors to help improve the quality of search strategies, and other documented roles as outlined by Spencer and Eldredge (2018).

Further, librarians can collaborate with the research teams as co-authors to conduct SRs not only in the topics defined by research teams, but also in LIS topics. Akers et al. (2018) found that research articles published in the Journal of the Medical Library Association (JMLA) between 2008 and 2017

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revealed that 29% of articles had both librarian and faculty coauthors. The main topics covered in these journal articles were related to patient and consumer health information and clinical information-seeking and decision-making by health care providers (Akers et al., 2018). It is obvious that librarians can collaborate with researchers/faculty members in SR to improve the knowledge and practice of LIS, and other scientific disciplines.

The inclusion of SR as part of the continuing scientist development (CPD) programmes in libraries is also important in building the capacity of the librarians. Librarians need to play a key role in this aspect by building their capacity in different aspect of SR as outlined by Spencer and Eldredge (2018). This effort will enable librarians to become competent and serve as both co-authors in the research teams from other disciplines, and also be lead authors for LIS research works.

Use of automated SR tools and software can enable librarians to minimize time when conducting SR. As previously explained, one of the challenge that librarians encounter is limited time to conduct SR (Koufogiannakis & Crumley, 2006; Xu et al., 2015b). Automated tools and software such as reference managements software, CADIMA and other tools which can be found at the SRtoolbox website (<http://systematicreviewtools.com/>) can enable librarians to minimize the workload involved when conducting SR.

The creation of LIS SR databases would also enhance promotion and advancement of SR in LIS. We need to have databases such as Cochrane Library in medicine or Campbell Collaborations in evidence-based policy and practice. As echoed by Ke and Cheng (2015), “this would require a substantial amount of funding, effort, and cooperation, but the benefits are obvious”. This type of database would enable researchers to find what has been done, and it will enhance reproducibility of research works, and enhance evidence-based practice in the LIS domain. Further, this database would comprise all the necessary tools and software that are important in informing librarians on how to conduct SR.

## **FUTURE RESEARCH DIRECTIONS**

Despite the fact that this chapter focuses on how information scientists can use SR as a research method to inform LIS profession, further studies are still required in several aspects. First, it would be important to conduct further research on how most of SR processes can be automated to enhance efficiency of conducting SR. Further, more analysis is required to assess the role of information scientists in SR methodology development. Action oriented research would be useful.

## **CONCLUSION**

This chapter discussed the current state of deployment of SRs in LIS field, and determined how information scientists can advance the SR as a research method in LIS domain. Despite its importance, SR is still not a common practice in the LIS domain. The methodological quality and reporting of SR is still poor in the LIS discipline. Since, they are experts in systematic literature search, the LIS scientists are supposed to take a lead this. Several barriers may limit deployment of SR in the LIS domain, which include: funding, time, experience, support, access to research and search issues, lack of skills in some aspects of SR. Therefore, it would be important for LIS schools and libraries administrators to overcome these issues, by introducing SR in LIS education curricular, integrate SR as part of the continuing scientist development programmes (CPD), encourage use of automated SR tools and software to minimize

workload, introduce SR a formal role and service in the libraries, collaborate with research teams as co-authors to conduct SRs not only in the topics defined by faculty members, but also in LIS topics, and encourage creation of LIS SR databases and tools.

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## **KEY TERMS AND DEFINITIONS**

**Critical Appraisal:** Is the process of carefully and systematically examining research to judge its trustworthiness, its value and relevance in a particular context.

**Data Extraction:** Once one has identified all studies to be included in the systematic review, the next step is to extract and analyze the data contained in those studies. The data extraction should be based on the previously defined interventions and outcomes established during the research question, inclusion/exclusion criteria, and search protocol development.

**Information Science:** Information science is that discipline that investigates the properties and behavior of information, the forces governing the flow of information, and the means of processing information for optimum accessibility and usability. It is concerned with the body of knowledge relating to the origination, collection, organization, storage, retrieval, interpretation, transmission, and utilization of information.

**Library:** Is a curated collection of sources of information and similar resources, selected by experts and made accessible to a defined community for reference or borrowing. It provides physical or digital access to material, and may be a physical location or a virtual space, or both.

**Meta-Analysis:** Involves using statistical techniques to synthesize the data from several studies into a single quantitative estimate or summary effect size.

**Protocol:** A systematic review protocol describes the rationale, hypothesis, and planned methods of the review. It should be prepared before a review is started and used as a guide to carry out the review. Detailed protocols should be developed a priori, made publicly available, and registered in a registry such as PROSPERO.

**Search Strategies:** Is an organized structure of key terms used to search a database. The search strategy combines the key concepts of your search question in order to retrieve accurate results. Your search strategy will account for all possible search terms, keywords and phrases.

**Systematic Review:** Is a review of a clearly formulated question that uses systematic and reproducible methods to identify, select and critically appraise all relevant research, and to collect and analyze data from the studies that are included in the review. A systematic review can be either quantitative or qualitative.

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# Chapter 3

## Research Methods and Methodologies Used in Studies on Social Accounting

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### ABSTRACT

*Accounting as a social science considers an objective and subjective reality that must be seen and understood under the institutional context where it is developed. Thus, this chapter discusses the roles and effects of the paradigms in accounting research, in general, and social accounting research, in particular, aiming to know and understand the research lines that better define a theoretical scope of analysis for the social accounting practice. This research tries to better fit the answers to some questions about social accounting. The results argue for the importance of keeping a theoretical paradigm alive in order to foster multidimensional openness and true scholarship in accounting research and application. A multi-disciplinary appreciation with different perspectives will enrich the research in social accounting.*

### INTRODUCTION

Over the last 20 years, social accounting literature has grown though it has not become significant in the mainstream literature. The increased sophistication of the research endeavour has not been restricted to the more positivist methods. One of the main reasons for literature enlargement about these issues relates to the explosion of fieldwork, which has not only increased the understanding of the strengths and weaknesses about the adoption of social and environmental issues by organisations but has also offered insights into how the discourse of social and environmental issues is managed. Social accounting has made considerable advances but also continues to register considerable gaps. Trying to understand social

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accountability requires re-drafting our mental maps and starting to ask new and potentially innovative and challenging questions within a research orientation (Gray & Laughlin, 2012).

Milne (2002) critically reviews the literature seeking to establish evidence for a positive accounting theory of corporate social disclosures in order to explain why firms are making social disclosures. Ferreira, Moulang and Hendro (2010), in a literature review on sustainability accounting, observe that the critical approach of accounting and sustainability reports contributes to the development and enhancement of internal management decision making. Ferreira et al. (2010) reinforce the critical approach, analyzing the evolution of research on accounting in a social and sustainability perspective, as well as the theoretical paradigms inherent to its conducting. Gupta, Briscoe and Hambrick (2016) in America studied the reason why American companies were running for Corporate Social Responsibility (CSR) and got to the conclusion that the size of the organization associated to the number of workers and to a differentiation strategy explained it. And to reach these objectives either a social accounting and a social audit both are needed. Aguinis and Glavas (2012) suggest that the type of research needed to advance the knowledge of CSR must be focused on a multi level approach. Furthermore, and for future research to be most informative, the inclusion of variables from more than one level of analysis in order to understand the microfoundations of CSR, as well as the methodological approaches undertaken will make these advances possible. Johnson and Onwuegbuzie (2004, p.16) argue “fortunately, many qualitative researchers and quantitative researchers (this is, postpositivists) have now reached basic agreement on several major points of earlier philosophical disagreement”. According to Seale (1999), the quality in (social) research may be improved by focusing on particular themes that the authors believe to be important when considering how to produce good quality research.

Traditionally, accounting comprises a set of accounting information system supporting decision makers prosecuting organisational objectives. Yet accounting has to be embedded of some quality and this means that the International Financial Reporting Standards are duly applied and followed (Christensen, Lee, Walker & Zeng, 2015). Wahyuni (2012) seek to answer the various research questions that are asked by accounting researchers and the beliefs that affect the ways to conduct social research.

Accounting as a social science, being either an objective reality and also a subjective reality, must clearly understand and interpreted. But how far does the institutional context where it is produced has used influences in its practices? What are the research lines that better answer to the social accounting practice? What research approaches better fit the answers to the questions on social accounting?

Thus, this study presents three main contributions. Firstly, it allows a reflection and understanding of accounting research lines in the track of to social accounting. Secondly, it is a work basis for future researches about theoretical paradigms on accounting. Finally, it alerts researchers to the relevance of contextual and organisational variables to be used in a deep research on sustainability accounting or social responsibility.

So, in the following sections it will be referred: first - the different perceptions of what theory is for accounting academics, second - the discussin about the theoretical research paradigms on social accounting and at last, third - some considerations about the research methods in accounting (quantitative, qualitative and mixed) with a relevant note about the importance of the theoretical triangulation of mixed methods.

## **ACCOUNTING THEORY**

In general terms, accounting academics seem to have very different perceptions of what is to be regarded as a theory, following social scientists who have had troubles in defining what a theory is. Some authors define it as all the existing literature on accounting. Others argue that it is an orienting set of ideas or explanatory concepts. The difficulty is to know when we have achieved a small/big/relevant theoretical contribution to the existent state of art or it contributes to get more hard questions that make it difficult to define the word “theory” (Malmi & Grandlund, 2009).

Just as theories stimulate empirical work, rich empirical settings stimulate theory. Some might argue that without data, generating hypotheses is a useless activity. In brief, a theory explains what has been observed, tests empirically the hypotheses constructed upon it and then predicts what is yet to be observed (Zimmerman, 2001). Whetten (1989) argues that four elements are mandatory for a complete theory:

1. The knowledge of which factors (variables, constructs, concepts) should be logically considered as part of the explanation of the phenomena of interest.
2. How they are related.
3. Why they are related, what are the underlying psychological, economic or social dynamics that justify the selection of factors and the proposed causal relationships?
4. Conditions that place limitations on the propositions generated from a theoretical model. (Malmi & Grandlund, 2009).

For Zimmerman (2001), the importance of accounting theory comes from a number of interest groups that have to make decisions about external accounting reports. Watts and Zimmerman (1986, p.2) argue that one important criterion for a theory’s success is “the value of the theory to users”. In the construction of an accounting theory, they subscribe the practical purpose of a theory in accounting.

Academic community should be able to use this theory in order to create better accounting practices by understanding the causes, effects and functioning of accounting. Sometimes the theory is referred as being simply the psychological, economic, or social dynamics providing answers to “why” questions. Others argue that any idea that can serve as a basis for a testable hypothesis is a theory. The argument is that we undertake research and develop theories to be used by someone to accomplish something (Malmi & Grandlund, 2009).

Questions such as “who”, “where” and “when” address the temporal and contextual factors that set the boundaries of generalisability. The authors argue that researchers should develop accounting theories devoted to value maximization, social equality and environmental sustainability. They do not believe that there can be one base theory. Researchers should clearly assume and explicate an objective and an objective function and build theories to support it (Malmi & Grandlund, 2009). As to these theories some paradigms of accounting research must be referred.

### **Paradigms of Accounting Research**

Scientific methodology of research has come under serious scrutiny in recent years from proponents of both scientific and naturalist research (Lee, Perara & Rahman, 2010). Research in accounting and finance is generally accepted as being social scientific, as appropriate standards of scientific enquiry are applied to social issues rather than natural phenomena, which is taken to be the domain of the natural sciences and

of physics in particular (Ryan, Scapens & Theobald, 2002). Philosophy is often presented as underpinning the craft of social research (Seale, 1999). Most accounting research areas started descriptively, by describing current accounting practice, but as empirical findings accumulate, theories were developed to explain what was observed and to predict phenomena yet to be observed (Zimmerman, 2001).

Since 1970, Hopwood has started to develop an alternative analysis to positive research in accounting. He gave the first steps on “social” research on accounting, by presenting accounting as an eminently social phenomenon. This way, the use of paradigms from other social sciences, such as sociology, anthropology, philosophy, among others, has become necessary (Vieira, 2009).

In the 80s, Tomkins and Groves referred that the accounting research was methodologically dominated by the adoption of “scientific” methods and adapted from natural sciences. This method uses a theoretical model to establish hypotheses, tests them and generalises results. However, to better understand the accounting effects and the way to answer practical daily concerns, more attention should be given to “natural” methods, which use the field work to study accounting in its “natural environment” (Vieira, 2009).

The philosophical assumption on which “scientific” method is based is positivism (of Auguste Comte). In general terms, positivism considers there is an objective reality that the researcher should understand in an objective, rational and unbiased form. This implies a distance between the researcher and the object to be studied. The “naturalist” method is based on “idealism” (of Kant), which accepts as many interpretations of reality as the researchers who are trying to interpret it (Vieira, 2009).

According to Morgan and Smircich (1980) - built on Burrell and Morgan’s ideas - and Vieira (2009), the researcher assumptions regarding the nature of the studied phenomenon reality (ontology) will affect how to achieve knowledge about the phenomenon (epistemology). And this affects the process of carrying out the research (methodology) and the decision which research methods might be appropriate.

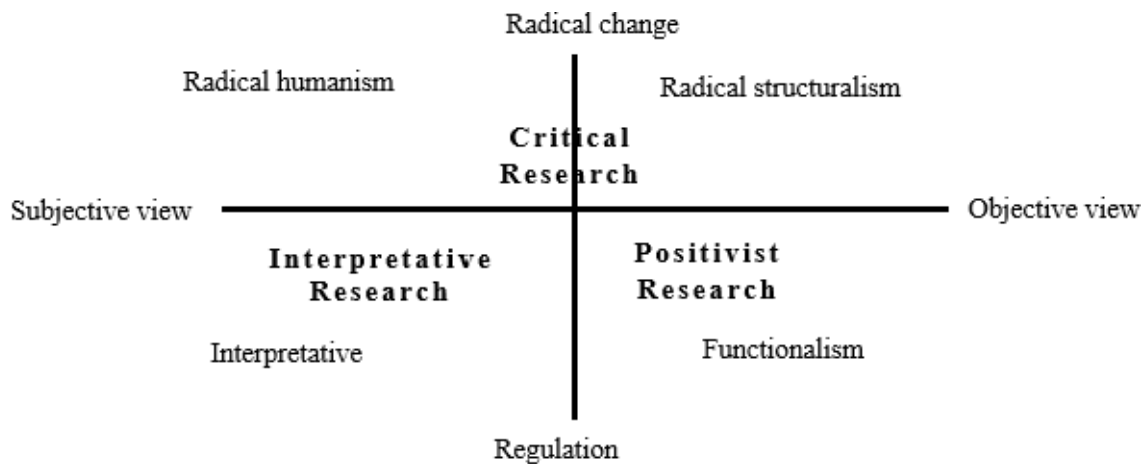
A methodology refers to a model to conduct a research within the context of a particular paradigm. Methodologies are closer to research practice. Methodology is a domain or a map, while a method refers to a set of steps to travel between two places on the map (Wahyuni, 2012). Methodology is a general approach to studying research topics; is usefulness for addressing the research question; e.g. qualitative methodology, positivism (Ahrens & Chapman, 2006). Thus, the research methodology selection depends on the phenomenon to be investigated (Ryan et al., 2002)

Just like any other social science, accounting carries out research based on assumptions about social science nature and society nature. And according to Hopper and Powell (1985), we may identify four views for the analysis of social theory in accounting: the functionalist perspective, the interpretative perspective the radical humanist perspective and the radical structuralist perspective (Figure 1).

Based on Burrell and Morgan’s work (1979), Hopper and Powell have proposed three paradigms in accounting research: positivist, interpretative and critical. They have considered two dimensions: social sciences nature – objectivism/subjectivism – and society approaches – regulation/radical change. Each of these paradigms - functionalist, interpretive, radical (radical humanist and radical structuralist) - reflects a network of related schools of thought, differentiated in approach and perspective, but sharing common fundamental assumptions about the nature of the reality that they address (Morgan, 1980).

Also, Gephart (2004, p.456) presents a brief review of three theoretical perspectives that are related to research methodology: “Positivism and Postpositivism, Interpretive Research and Critical Postmodernism”. For this author the relationship between theory and methodology is important. Researchers need to use methodologies that are consistent with the assumptions and aims of the theoretical view being expressed. But, the challenge to organization theory emanating from these paradigms is to penetrate

Figure 1. Hopper and Powell's taxonomy of accounting research



Source: Hopper and Powell (1985, p.432, adapted)

beneath the surface appearance of the empirical world, and reveal the deep structure of forces which account for the nature, existence, and ongoing transformation of organizations within the total world situation (Morgan, 1980). While accounting can by no means be labelled as a single-paradigm discipline, either in principle or in practice, it is strongly dominated by one paradigm (Lukka, 2010).

Goddard (2010) provides an analysis in a broad review of the public sector accounting research in recent years and reveals a methodological distinction between research undertaken in the US (using predominantly functionalist methodologies, accompanied by positivist quantitative research methods) and that undertaken in the rest of the world (using interpretive and radical/alternative methodologies, with qualitative research methods).

Wahyuni (2012) presents a model for undertaking a research process in context to research paradigms in social sciences: positivism (naïve realism); postpositivism (critical realism); interpretivism (constructivism) and pragmatism.

### **Positive Research on Accounting**

Accounting issues are predominantly studied within the positivist paradigm, given that, typically, deal with number crunching (Wahyuni, 2012).

Jensen (1976) has launched the challenge to develop a positive accounting theory (PAT) to explain why accounting is what it is, why accountants do what they do and what effects these phenomena have on people and on resources used. The systemization of PAT by Watts and Zimmerman (1978; 1986), tries to explain and predict managers' accounting choices from incentives they face. PAT claims to give reliable and empirically sustainable answers to questions that policymakers regard to be important (Ryan et al., 2002). PAT has been suggested to explain why firms make voluntary social disclosures (Milne, 2002).

## ***Research Methods and Methodologies Used in Studies on Social Accounting***

The main idea of the “positive approach” is to develop hypotheses about the factors influencing accounting practices and empirically test the validity of those hypotheses (Zimmerman, 1980). The positive research assumes the researchers’ role is to study problems towards their resolution (Vieira, 2009).

Many researchers contest this type of research, not on grounds of method, but because they do not agree with the philosophical premises upon which the research is based (Ryan et al., 2002).

### **Critical Research on Accounting**

Critical perspective on accounting research examines the interplay between the organisation and the broader socioeconomic and historical context by consulting other social sciences, such as sociology, history, political science and anthropology (Wickramasinghe & Alawattage, 2007). It concerns the social element on research and the assumptions about the world we live in. According to this, accounting could be described as a capitalism language by the relevance given to the economic effectiveness. It emphasises the social, political, economic, cultural, ethical and gender aspects. Critical researchers worry about the power distribution, inequality and injustice/work processes (Vieira, 2009). Accounting may be seen as a power source for certain groups within organisations (Ryan et al., 2002). But accounting may be considered as an interpretative research.

### **Interpretative Research on Accounting**

The focus of the interpretative or perspective differs from the focus on variables and hypothesis falsification used in postpositivism. The goal of interpretative research is to understand the actual production of meanings and concepts used by social actors in real settings. (Gephart, 2004). “By investigating the subjective meanings of social phenomena and the resultant behaviour, interpretive accounting researchers have sought to provide a better understanding of functioning accounting practices” (Wahyuni, 2012, p.72). A relativist stance is adopted so that diverse meanings are assumed to exist and to influence how people understand and respond to the objective world. Interpretative research thus describes how different meanings held by different persons or groups produce and sustain a sense of truth, particularly in the face of competing definitions of reality (Gephart, 2004).

The interpretative research solves one of the positive theory problems: it locates structures in the social setting and analyses how these evolve over time, trying to understand the phenomenon under observation (Ryan et al., 2002; Vieira, 2009).

Interpretative research usually uses qualitative methods. It does not seek ultimate truths but diverse interpretations as it considers reality is not apprehensible, instead it is a construction depending on the intervenients interacting with it. There is researcher’s involvement with objects and the interpretation of phenomena results from personal experience. Thus, there are multiple valid and interesting ways of seeing the world (Vieira, 2009).

Although the theoretical or methodological approach is the most interesting aspect to investigate yet it is also the most difficult to categorise. The study of Goddard (2010) in review of the public sector accounting research in recent years, including that undertaken in the US reveals that ...”In paradigmatic terms 28% of these papers were informed by a functionalist approach, 19% by an interpretive approach and 17% by a radical/alternative approach.” Goddard (2010, p.79). Still reveals “a methodological distinction between research undertaken in the US (using predominately functionalist methodologies, accompanied

by positivistic quantitative research methods) and that undertaken in the rest of the world (using interpretive and radical/alternative methodologies, with qualitative research methods).” Goddard (2010, p.75)

Cunliffe (2010), in his study, updates Morgan and Smircich’s typology, based on contested subject-object distinction. It replaces three problematics—intersubjectivism, subjectivism, and objectivism—and examine the ontological, epistemological, and methodological assumptions of each. It still provides a way of understanding the various philosophical and methodological possibilities open to qualitative researcher.

### **Study Boiral and Henri (2017) – GRI Reports**

Boiral and Henri (2017), in your study discussed the results of their study using different assumptions on the measurability and comparability of companies’ GRI Reports fusing different theoretical perspectives: functionalist, critical and postmodern.

The functionalist perspective is largely dominant in the literature. It is clearly in line with the GRI principles. It assumes that sustainability performance can be transparently measured and compared from rigorous and standardized reports, in particular if firms are from the same sector of activity. From this perspective, the lack of quantitative indicators, the incomplete information released by organizations, and the elastic conformity with the GRI requirements may explain the noncomparability issues observed.

The critical perspective does not directly question the measurability or comparability of sustainability performance in itself but rather its reliability. This perspective clearly challenges the transparency and reliability of information disclosed by organizations. The reasons of noncomparability are not technical but rather political, and sustainability reports tend to appear as an exercise of “greenwashing” controlled by unscrupulous managers.

Finally, the postmodernist perspective proposes a new and very different approach, focusing on the fuzzy, elusive, and unmeasurable nature of sustainability which is basically a discursive concept. According to this, difficulties in ranking companies according to their sustainability performance is associated with an impossible quest for indicators to measure the elusive, opaque and indefinable reality of sustainability. As a result, regardless of the appearance of rigor of indicators and the good faith of managers, sustainability reports cannot describe reality and be used to compare performance due to their narrative nature.

And putting them, altogether (Table 1) evidencing the advantages and disadvantages of each perspective, one can get an interesting brief of these ideas:

These were some examples of the so many theories one can use in order to grasp the social accounting issue. Yet, besides the theory which is most important for constructing the social accounting theoretical frame of analysis, it is now quite relevant to mention the methods used for testing it.

### **Research Methods: Quantitative, Qualitative and Mixed**

The opposition and debate between quantitative and qualitative methods goes back to social sciences foundation. Over the last 20 years both from quantitative and qualitative approaches, academics have written abundant literature questioning the competitive methods. This has been grounded more in epistemologic options than in research practice in social field (Serapioni, 2000). But it is not easy to accurately limit boundaries between what is qualitative and quantitative research (Vieira, Major & Robalo, 2009).

A lot of effort has been done by methodologists over the years, trying to give some guidance to qualitative researchers in improving or judging the quality of qualitative research. This led qualitative

*Table 1. Summary of the theoretical perspectives on sustainability reporting*

	<b>Funcionalist perspective</b>	<b>Critical perspective</b>	<b>Postmodernist perspective</b>
<b>Sustainability reporting</b>	Transparently describe sustainability performance when similar standards are followed	Quite superficial mechanism that tends to hide the fundamental unsustainability and contradictions of organizations	Spectacle or simulacrum that tells an idealized story to make people believe that sustainability can really exist and be achieved
<b>Interpretation: incomplete and ambiguous information</b>	Compliance issue that could be addressed by more rigorous external verification of GRI reports	External verification is not reliable as long as it is decided and paid by the client's organization	Information on sustainability is inevitably incomplete, ambiguous, and can hardly be both compliant and transparent

**Source:** Boiral and Henri (2017, adapted)

methodologists to look for new terms that either substituted the scientific language of earlier periods or added new ideas to them (Seale, 1999).

Postpositivism differs from positivism in holding that reality can be known only probabilistically, and hence verification is not possible. Falsification (not verification) of hypotheses becomes the basic task of research. Well-developed postpositivist qualitative methods can uncover facts and compare facts to hypotheses or prior findings in an attempt to falsify prior hypotheses or to contradict previous knowledge (Gephart, 2004).

Qualitative research employs the meanings in use by societal members to explain how they directly experience everyday life realities. Quantitative, positivist research, in contrast, imposes scientific meanings on members to explain a singular, presumed-to-be true reality that nonscientists may not appreciate. Qualitative research starts from and returns to words, talk, and texts as meaningful representations of concepts. “Quantitative research codes, counts, and quantifies phenomena in its effort to meaningfully represent concepts”. Qualitative research thus has an inherently literary and humanistic focus, whereas quantitative research is grounded in mathematical and statistical knowledge (Gephart, 2004, p.455).

While quantitative research methods have been initially developed in the natural sciences field, with the objective of studying natural phenomena, qualitative research methods have been developed by social sciences researchers, who were trying to study social phenomena. The choice between different methods used for research should depend on the research itself (Vieira et al., 2009).

Qualitative research has been suffering innumerable transformations in the epistemologic and methodological field. The term qualitative implies an emphasis on entities' qualities and on processes and meanings. Qualitative research considers, as a starting point, that social systems cannot be treated as natural



phenomena, but as socially built phenomena. Thus, this research adopts an interpretative philosophical position, in the broadest sense of the term, as it tries to explain how social phenomena are interpreted, understood, produced and constituted (Vieira et al., 2009).

This research method is concerned about the understanding of social phenomena in natural environments (Denzin & Lincoln, 2000). It facilitates a comprehensive and detailed study of issues (Patton, 2002). It takes into account the complexity, detail and context of the phenomenon studied. There is a greater concern about the analysis and comprehensive explanation of phenomena (Vieira et al., 2009).

Denzin and Lincoln (2000) define qualitative research as a located activity which places researcher in the world, involving an interpretative, naturalist approach to the world. This means qualitative researchers make their studies in natural environments, trying to make sense or interpret phenomena regarding meanings people bring them. They interpret material practices which make the world a series of representations, including field notes, interviews, conversations, photographs, records and memos for the record.

Qualitative researchers seldom worry explicitly about the issue of generalisability. The goal of most qualitative studies is to provide a rich, contextualized understanding of human experience through the intensive study of particular cases. Qualitative researchers do not all agree, however, about the importance or attainability of generalisability (Polit & Beck, 2010).

The major characteristics of traditional qualitative research are induction, discovery, exploration, theory/hypothesis generation, the researcher as the primary “instrument” of data collection, and qualitative analysis. The major characteristics of traditional quantitative research are a focus on deduction, confirmation, theory/hypothesis testing, explanation, prediction, standardized data collection, and statistical analysis (Johnson & Onwuegbuzie, 2004).

The advantage of qualitative research is that it offers scholars a rewarding and meaningful way to lead their lives. The rewards include direct engagement with everyday management and organisational realities and opportunities to make substantial contributions to the field (Gephart, 2004).

An important value of the qualitative research is description and understanding human interactions, real meanings and processes, constituting organisational real life contexts. It also involves both data collection and data analysis. Both steps in the research process can be qualitative or quantitative. Many scholars consider the quantitative analysis of qualitative data to be qualitative research. But it can be argued that quantitative analysis of qualitative data requires data to be quantified, and hence this is quantitative research (Gephart, 2004).

From the methodological point of view, there is no contradiction, as there is no continuity between quantitative and qualitative research. Both have different natures. Quantitative research acts at reality levels and aims to bring data, indicators and observable tendencies to the light. Qualitative research, on the other hand, works with values, beliefs, representations, habits, attitudes and opinions (see Minayo & Sanches, 1993; Serapioni, 2000).

Qualitative researchers also seek to explain research observations by providing well-substantiated conceptual insights that reveal how broad concepts and theories operate in particular cases. This approach is distinct from that of quantitative research using the hypothetical-deductive model that uncovers important relationships among variables and tests general propositions. The distinction just drawn between qualitative and quantitative research overstates the differences between these overlapping genres (Gephart, 2004).

Qualitative studies frequently deal with isolated cases or small samples, given the need of contextualization and the nature of instruments used for data collection and analysis. In some research sectors, these still go through some legitimation and acceptance difficulties, as reliability of qualitative research

## **Research Methods and Methodologies Used in Studies on Social Accounting**

results is questioned by many advocates of the quantitative paradigm (Serapioni, 2000). The most common research methods, as research techniques allowing specific analysis according to the methodology followed in the study, are interviews, observation, texts and documents, audio and video records. These may be combined in a single study, for information triangulation (Vieira et al., 2009).

To Wahyuni (2012), whereas a methodology is the theoretical and ideological foundation of a method, a method is a practical application of doing research. It is independent from methodologies and paradigms. It is a set of specific procedures, tools and techniques to gather and analyse data (e.g. a research method - an interview - can be used in different research methodologies). Method is a specific research technique; fit with theory, hypothesis, methodology, and domain; e.g. interviews, observations, questionnaires, conversation analysis (Ahrens & Chapman, 2006).

Qualitative research may use quantitative data analysis and explanation. However, static analysis is not one of its fundamental methods because static generalisation does not provide explanations for specific cases (Vieira et al., 2009). Qualitative research often involves fieldwork, and the word “work” is important here. There are no algorithms for producing it (Gephart, 2004).

Strauss and Corbin (1990) present some reasons for doing qualitative research. Firstly, to better understand any little known phenomenon; secondly, to acquire a new perspective or more in-depth information about something already known; thirdly, to attain the intricate details about the phenomena, such as feelings, emotions, thinking processes which are very difficult to extract through other research methods; fourthly, to find new information through open-ended questions asked which allows further in-depth discussion between interviewer and interviewee; and, finally, to complement the quantitative research method.

Quantitative methods – logical positivism – are oriented towards qualification, orientation for verification, hypothetical-deductive nature, assumption of a static reality, orientation for results, replicability, generalisation and possibility (Serapioni, 2000). Quantitative methods are weak in terms of internal validity (we not always know if they measure what they aim to measure). However, they are strong in terms of external validity: the results attained are generalisable to all the community. On the other hand, qualitative methods have a strong internal validity (focus the particularities and specificities of the social groups studied), but are weak in terms of enabling generalising results to the community (Perrone, 1977)

Mixed methods research should, instead, use a method and philosophy that attempt to fit together the insights provided by qualitative and quantitative research into a workable solution. “Mixed methods research is formally defined here as the class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language into a single study” (Johnson & Onwuegbuzie, 2004, p.17).

Wahyuni (2012) - based on Saunders et al. (2009, p.119), Guba and Lincoln (2005), and Hallebone and Priest (2009) - presents research methodology (the model behind the research process): quantitative, in paradigm positivism; quantitative or qualitative, in paradigm postpositivism; qualitative, in paradigm interpretivism; and quantitative and qualitative (mixed or multimethod design), in paradigm pragmatism. After the consideration of the methods of analysis which can be used in order to test the theoretical frame about social accounting the case study application will be considered as an academic interesting way of gathering academic information (data) either qualitative, quantitative or mixed.

## **Case Studies**

Past literature reveals the application of the case study research method in many areas and disciplines. They are widely recognised in many social science studies especially when in-depth explanations of a social behaviour are sought after. It can be considered a robust research method particularly when a holistic, in-depth investigation is required. There are other areas, beyond sociology and medicine, as government, management and education that have extensively used case study methods (Zainal, 2007).

The all-encompassing feature of a case study is its intense focus on a single phenomenon within real-life context. The method is not troubled by the fact that the context contains innumerable variables – therefore leading to the following technical definition of case studies (Yin, 1999).

Case studies are research situations where the number of variables of interest far outstrips the number of datapoints (Yin, 1994). “Case study research is remarkably hard, even though case studies have traditionally been considered to be “soft” research. Paradoxically, the “softer” a research technique, the harder it is to do” (Yin, 1984, p.26). Yin (1984, p.23) defines the case study research method “as an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used.” But confusion is frequent “regarding types of evidence (e.g., qualitative data), types of data collection methods (e.g., ethnography), and research strategies (e.g., case studies)”. “The case study does not imply the use of a particular type of evidence, can be done by using either qualitative or quantitative evidence” (from fieldwork, archival records, verbal reports, observations, or any combination of these). Nor does the case study imply the use of a particular data collection method (ethnographies or of participant observation). “Numerous case studies have been done without using these methods” (Yin, 1981, p. 58-59).

In defining case studies, Stake (1995) distinguishes three types: the intrinsic, the instrumental and the collective. In an intrinsic case study, a researcher examines the case for its own sake. In an instrumental case study, the researcher selects a small group of subjects in order to examine a certain pattern of behaviour. In a collective case study, the researcher coordinates data from several different sources, such as schools or individuals. Unlike intrinsic case studies which set to solve the specific problems of an individual case, instrumental and collective case studies may allow for the generalisation of findings to a bigger population (Zainal, 2007). The choice of a single organization and a single industry limits the statistical generalizability (see Yin, 1984) of the study.

Case study method enables a researcher to closely examine the data within a specific context. In most cases, a case study method selects a small geographical area or a very limited number of individuals as the subjects of study. Case studies, in their true essence, explore and investigate contemporary real-life phenomenon through detailed contextual analysis of a limited number of events or conditions, and their relationships (Zainal, 2007). However, when formulating the questions to research it is important to define if a single case or multiple cases study should be used for the purpose (Vieira et al., 2009). Yin (2003) advocates that the single study case is more vulnerable in results. Multiple ones are more convincing and global study is considered more robust, despite taking longer and being more expensive. To Wahyuni (2012, p.72),

*Ideally case study research should use a multiple case study design involving multi-sites to be studied and using multiple methods to analyse the collected data. The rationale behind the choice of a multiple*

*case study over a single case study is to enable comparisons between the observed practices by subjects studied in order to obtain a more comprehensive understanding of these practices.*

One of the reasons for the recognition of the case study as a research method is that researchers were becoming more concerned about the limitations of quantitative methods in providing holistic and in-depth explanations of the social and behavioural problems in question. Through case study methods, a researcher is able to go beyond the quantitative statistical results and understand the behavioural conditions through the actor's perspective. In these types of study, limiting to only quantitative method would obscure some of the important data that needed to be uncovered (Zainal, 2007).

A case study is a unique way of observing any natural phenomenon which exists in a set of data (Yin, 1984). By unique it is meant that only a very small geographical area or number of subjects of interest are examined in detail. Unlike quantitative analysis which observes patterns in data at the macro level on the basis of the frequency of the phenomena being observed, case studies observe the data at the micro level (Zainal, 2007).

Following Yin (1994, 2003), case studies are the preferred strategy when "how" or "why" questions are posed, when the researcher has little control over events, and when the focus is on a contemporary phenomenon within some real-life context. Thomas (2011) suggests that a case study must comprise two elements: a "practical, historical unity," (the subject of the case study), and an analytical or theoretical frame (the object of the study). For him, case studies are analyses of persons, events, decisions, periods, projects, policies, institutions, or other systems that are studied holistically by one or more methods. The case that is the subject of the inquiry will be an instance of a class of phenomena that provides an analytical frame - an object - within which the study is conducted and which the case illuminates and explicates. Yet, as there are no perfect solutions, the case study consideration presents advantages and disadvantages.

## **Advantages and Disadvantages of Case Study**

Case studies are considered useful in research as they enable researchers to examine data at the micro level. As an alternative to quantitative or qualitative research, case studies can be a practical solution when a big sample population is difficult to obtain (Zainal, 2007).

Although case studies have various advantages, in that they present data of real-life situations and they provide better insights into the detailed behaviours of the subjects of interest, they are also criticised for their inability to generalise their results. Case study method has always been criticised for its lack of rigour and the tendency for a researcher to have a biased interpretation of the data (Zainal, 2007).

Yin (1984, p.21) discusses three types of arguments against case study research, noting that "too many times, the case study investigator has been sloppy, and has allowed equivocal evidence or biased views to influence the direction of the findings and conclusions". Case studies are often accused of lack of rigour and provide very little basis for scientific generalisation since they use a small number of subjects, some conducted with only one subject (Zainal, 2007). The question commonly raised is "How can you generalise from a single case?" (Yin, 1984, p.21).

When data is not managed and organised systematically, case studies of ethnographic or longitudinal nature can elicit a great deal of data over a period of time (Zainal, 2007). Case studies are often labelled as being too long, difficult to conduct and producing a massive amount of documentation (Yin, 1984). A common criticism of case study method is its dependency on a single case exploration making it dif-

difficult to reach a generalising conclusion. Zainal (2007) refers that Yin considered case methodology 'microscopic' because of the limited sampling cases. For Yin (1994), however, parameter establishment and setting a research objective are far more important in case study method than a big sample size.-

The concerns about valid and reliable measurement and inference remain critical. Study researchers still lack a common language of reporting conveying their attention to validity and reliability in study design. Yet for many field studies executed within a positivist paradigm, the methodological science is no different from field studies (Lillis, 2010). Thus, a research design is important to connect a methodology and an appropriate set of research methods in order to address research questions and or hypotheses that are established to examine social phenomena (Wahyuni, 2012).

Concerns with validity and reliability, developed within the quantitative or scientific tradition, moved on under the pressure of critique from the qualitative research community to explicit discussions of quality in social research (Seale, 1999). Grounds for establishing reliability and generality are also subjected to scepticism when a small sampling is deployed. Often, case study research is dismissed as useful only as an exploratory tool. Despite these criticisms, researchers continue to deploy the case study method particularly in studies of real-life situations governing social issues and problems. Case studies from various disciplines and domains are widely reported in the literature (Zainal, 2007). All in all, just like the criteria of validity and reliability, there is more than one type of qualitative generalisation (Ali & Yusof, 2011). Case study research is one of the principals means by which inquiry is conducted in the social sciences. But that methodological discussion of case study has tended to focus on its epistemological status, its generalizing "power," or on various aspects of study construction (Thomas, 2011).

Case studies have become very popular as a way of reducing the gap between theory and practice that is being considered to exist in accounting (see Yin, 1984; 1994; 1999; 2003; Zainal, 2007; Vieira et al., 2009; Thomas, 2011).

Difficulty in generalising from case studies has been considered a major shortcoming of the method, whether the research involves single case studies or multiple-case studies. However, the focus on design as the driving definition of case studies provides useful advice for dealing with this problem (Yin, 1981; 1999). To consider a case study as a unit, to be equivalent to an experiment, as a unit, multiple-case studies may then be considered equivalent to multiple experiments. Under this assumption, the problem of generalising from case studies is no different from the problem of generalising from experiments - where hypotheses and theory are the vehicles for generalisation (Yin, 1999).

To this extent researchers carrying out case studies are not "theory driven" (a criticism that has been raised by some), but are "driven to theory." However, an alternative possibility is that the individuals who were surveyed were not necessarily part of the service delivery system that was studied on site visits. The findings under these conditions therefore contain some ambiguity (Yin, 1981). According to Yin (1994), generalisation of results from case studies, from either single or multiple designs, stems on theory rather than on populations.

Generalisation is an act of reasoning that involves drawing broad conclusions from particular instances - that is, making an inference about the unobserved based on the observed. It is widely-acknowledged as a quality standard in quantitative research, but is more controversial in qualitative research (Polit & Beck, 2010).

In qualitative studies, the issue of generalisation is even more complicated, and more controversial. The goal of most qualitative studies is not to generalise but rather to provide a rich, contextualized understanding of some aspect of human experience through the intensive study of particular cases (Polit

& Beck, 2010). Qualitative studies have faced difficulties to get their results to be generalised from the study sample to all the population, still being criticised by their lack of generalisation (Ali & Yusof, 2011).

Rather than disdaining the possibility of generalisability (some qualitative researchers) or unfairly assailing the limitations of qualitative research to yield general truths (some quantitative researchers), researchers with roots in all paradigms can take steps to enrich the readiness of their studies for ‘‘reasonable extrapolation’’ (Patton, 2002, p.489). In an environment where evidence for improving practice is held in high esteem generalisation regarding knowledge merits careful attention by both qualitative and quantitative researchers, often ignored or misrepresented by both groups of researchers (Polit & Beck, 2010).

There are qualitative studies which may be considered pretty enlightening due to the fact that they are able to balance the story reporting with the research process accomplished. But qualitative research may still satisfy other types of generalisation (Ali & Yusof, 2011).

Some challenge to the possibility of generalisability in any type of research, be it qualitative or quantitative. In quantitative research, replication of participants, in the form of adding to sample size, can enhance generalisation, as well as statistical power. Qualitative and quantitative studies have developed their own special ways of dealing with generalisation, none of them with perfect success (Polit & Beck, 2010). But nowadays, one of the most promising areas in research is to use the theoretical triangulation of different approaches (Hopper & Major, 2007).

## **Triangulation**

A single theory would have been captured a little on the multidimensional issues in organisations. Theory-triangulation approach offers alternative interpretations of the same phenomena because each theory can reflect distinctive insights on various dimensions of accounting and practices of control in the organisations. A theory-triangulation from conflicting perspectives is useful since one perspective may be complementary to the other without being theoretically integrated (Hopper & Hoque, 2010).

Triangulation uses multiple methods of social research. There are authors claiming that triangulation therefore only makes sense from within a positivist framework. The idea of triangulation derives from discussions of measurement validity by quantitative methodologists working with crudely realist and empiricist assumptions (Seale, 1999).

The use of several methods and sources (triangulation) is a way to enhance the complexity, richness and rigour of the study object understanding, also contributing to increase its validity, whether internal and external (Denzin & Lincoln, 2000). For the quality of politically driven research projects, the triangulation is enhanced by the elicitation of multiple perspectives: member checking, accounting for negative instances, analytic induction, uses of numbers, using low inference descriptors, the grounding of theory, deconstructive approaches, reflexive accounting, and new textual forms of reporting, as well as others (Seale, 1999). Surveys can be invaluable in gathering case study evidence, but so can archival analyses, documentary searches, and direct field observations. In fact, the more all of these techniques are used in the same study, the stronger the case study evidence will be (Yin, 1981).

In using multiple sources of evidence, the goal during the data collection process is to amass converging evidence and to triangulate over a given fact. For case studies, data collection may – and should - involve a broad variety of techniques, not just a single technique such as conducting a site visit (Yin, 1981). To Yusoff, Nabiha, Khalid and Amran (2011), the interpretive case study offers us the possibility to deal with a multiple variety of data, such as, interviews, observations and other documentary materi-

als. These multiple sources of evidence form a triangulation of data which provides a full understanding of the phenomenon under study.

Many might feel that it is a technique impossible to employ without also taking on modernist philosophical commitments within a positivist, or at least postpositivist, paradigm together with a commitment to constructing a single true version (Seale, 1999). Triangulation that occurs as data collection proceeds (which may be distinctive to case studies) and is not the same as the triangulation that later occurs when findings are being interpreted (common for all types of empirical research) (Yin, 1981).

According to Johnson and Onwuegbuzie (2004), fortunately, many strategies are recognized and regularly used in qualitative research (such as member checking, triangulation, negative case sampling, pattern matching, external audits) to help overcome this potential problem and produce high-quality and rigorous qualitative research.

The triangulation ensures the validity and reliability of qualitative research (Yin, 2003). Formal case study protocols are used to promote such triangulation during data collection, as well as to define the data collection process more generally (Yin, 1994). A protocol is not a questionnaire (posing questions to interviewees) but represents the researcher's own agenda in pursuing the line of inquiry for the case study. In other words, the "respondent" for the case study protocol is the case study researcher, addressing research questions and following a line of inquiry by having collected and triangulated a variety of evidence (Yin, 1999, p.1219).

## **SUMMARY AND DISCUSSION**

This study started with the consideration of the accounting research, and the actual growing diversification of the methodologies used (Vieira, 2009). For over a century, advocates of quantitative and qualitative paradigms have been seen in ardent disputes. From these debates, purists have come from both sides' articulate suppositions consistent to what is commonly called positivist philosophy (Johnson & Onwuegbuzie, 2004).

This research is of interest not only to academics in accounting, finance, and economics, but to the students of accounting (even though sometimes the professionals may find some of the results disturbing) (Zimmerman, 1980). It is also important to note that no theory should be discarded just due to some incompatible observations, but the best is determined by enabling students and practitioners to explain and predict accounting choices. Literature explains why accounting is used and provides a framework for predicting accounting choices (Watts & Zimmerman, 1990). Accounting researchers should not ignore why accounting is what it is (Zimmerman, 2001).

The evidential basis of social accounting - just like the rest of social science - will be necessarily managerialist and conservative unless its practitioners exercise a conscious deliberate policy to formulate and pose the challenging questions and/or to deliberately manoeuvre themselves to work at the margins. There seems to be reluctance among accountants to confront the really radical challenges (Gray & Laughlin, 2012).

Social accounting largely demonstrates a complete disregard for methodological concerns - if positivism provides useful insights then, fine. If an engagement can be most productively achieved using ethnography, then that is fine too. It is a dawning realisation that matters of theory, elegance, methodology or even the strutting of intellectual testosterone are matters of such triviality - are deserving of such utter scorn - when faced with the facts of starvation, privation, degradation, injustice and so on (Gray, 2008).

## **Research Methods and Methodologies Used in Studies on Social Accounting**

Positivism and postpositivism adopt the stance of realism and rely on the assumption of an objective world external to the mind that is mirrored by scientific data and theories (Gephart, 2004). Qualitative purists (also called constructivists and interpretivists) reject what they call positivism. Qualitative purists are also characterised by a dislike of a detached and passive style of writing, preferring, instead, detailed, rich, and thick (empathic) description, written directly and some-what informally. They argue for the superiority of constructivism, idealism, relativism, humanism, hermeneutics, and, sometimes, postmodernism (Johnson & Onwuegbuzie, 2004).

Positivist paradigm tries to explain and predict phenomena based on implicit connotations of rationality and objectivity. Interpretative and critical paradigms assume a subjective vision of accounting phenomena, trying to understand the interaction occurring within them. However, critical researchers still question the morality of treatment of the several parts involved. But there are quality and rigour criteria in all the paradigms (Vieira, 2009).

Quantitative purists maintain that social science inquiry should be objective. They contend that the observer is separate from the entities that are subject to observation, believing that social observations should be treated as entities in much the same way that physical scientists treat physical phenomena (Johnson & Onwuegbuzie, 2004).

Explanation in the social sciences invariably entails interpretation. It is rarely a technical problem of identifying some particular law of behaviour as is usually the case with explanation in the natural sciences. A plurality of methodologies is possible and each perspective can lead to fruitful research. Most the social sciences are methodologically highly diverse (Ryan et al., 2002).

Positivists and neopositivists currents only define as scientific the researches based on observation of experiment data and that use sophisticated measurement instruments. So, they claim qualitative methods do not originate reliable results. On the other hand, qualitativist scholars support that quantitativists, by not taking the subject's place, do not accomplish valid researches (Serapioni, 2000).

On the scope of interpretative research, institutional theory has been the main current as it studies accounting as an institution inside an organisation. That is, it may explain the legitimation process of organisations belonging to a certain organisational field and justify the adoption of certain organisational change patterns or to explain resistance to change (Vieira, 2009).

“Good qualitative research is difficult and challenging to undertake”, being more difficult and longer than quantitative research, as it normally involves fieldwork. “The rewards include direct engagement with everyday management and organisational realities and opportunities to make substantial contributions to the field. Qualitative research often advances the field by providing unique, memorable, socially important and theoretically meaningful contributions to scholarly discourse and organisational life” (Gephart, 2004, p.461). Qualitative research adopts a holistic orientation, enabling to understand, interpret and in-depth explain social practices, where accounting practices are included (Vieira et al., 2009).

The qualitative research, specifically the study case, is the most suitable approach to understand the world phenomena through which views, experiences, and perceptions are attained by direct conversation between researcher and actors. This qualitative approach of interpretative study case also leads to respond to CSR researchers who have suggested a deeper study to be conducted to understand related sustainability issues instead of just focusing the content analysis or research approach (Yusoff et al., 2011; Wahyuni, 2012). Although Wahyuni (2012) consider that content analysis is the technique that been used by both quantitative and qualitative researchers in the social sciences, including accounting, as a common approach to the interpretation of meanings from textual data.



Milne (2002), just like Gray, Kouhy and Lavers (1995), in the context of social and environmental disclosures research, dismisses the positive accounting arguments and literature on the grounds of the underlying assumptions of the theoretical framework. As they suggest, positive theories are not about what (social) reporting should be, but rather about what it is. As a basis for change and improvement, positive theories are seen to offer little or no development of corporate (social) reporting.

Research through the case study may be positive, interpretative or critical. On accounting, positivist studies try to test theories with the objective of enhancing the phenomena prediction and control. Interpretative studies try to understand the underlying context of the accounting information systems and how these influences and are influenced by the context. Critical researchers focus on oppositions, conflicts and contradictions of contemporary society and try to eliminate dominance causes (Vieira et al., 2009).

Goddard (2010) refer the non-US research is predominantly interpretive and critical, often informed by social theorists concerned with context and relies on qualitative methods, in contrast approach US, that is within the functionalist paradigm adopting a positivistic methodology, often informed by neoclassical economics and relying on quantitative research methods. But, adoption of either approach should not be regarded as the only correct way, nor should it dismiss research undertaken with a different approach. The debate these paradigmatic approaches hold over the research agendas can lead to insularity and limited research within each community.

However, according to Johnson and Onwuegbuzie (2004) the narrowing of the division between quantitative and qualitative researchers, promotes research through mixed methods with great potential for promoting shared responsibility in the pursuit of accountability for educational quality. The time has come for mixed methods research. The most important thing for social accounting academic researchers to recognise is that their work should not be narrowly defined (Gray & Laughlin, 2012). "It would be naive to expect that the 'fresh' approaches to accounting research will eventually constitute the single correct orthodoxy, or that they will be capable of being slotted into functional work" (Hopper & Powell, 1985, p.456).

## **CONCLUSIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH**

This type of analysis may offer a deeper understanding of the theoretical or methodological approach and contributes to a broader understanding of the social accounting issue.

As a consequence of what has been previously referred in this paper, one can not say that there is a single way of making research on accounting and particularly on the TBL (Triple Bottom Line) sustainability accounting. The "best" form of making high quality research on TBL or sustainability accounting is not on the choice of the type of research to follow but solely on having into account the researcher's ontological (reality vision) and epistemologic assumptions (how to acquire knowledge on the phenomenon analysed). And, in this case, the case study method, with mixed methods research, may play a relevant role on this area.

Hopper and Major (2007) are right when they consider that there can be good and bad quality research on accounting, whether adopting the positivist, interpretivist or critical paradigm. However, both the case study with mixed methods research and the theoretical triangulation may be ways for the researchers to follow and to develop, and apparently opposing theoretical perspectives, closer in the future, particularly on TBL or sustainability accounting, as a social science. According to Wickramasinghe and Alawattage

(2007) “because there are different perspectives, change occurs and can broaden our understanding of accounting, as a learning methodology”.

Employment and appreciation of different perspectives in the accounting may enhance a more productive dialogue between groups and foster the development of accounting knowledge in new areas.

The researchers should keep paradigm debates alive in order to foster multidimensional openness and true scholarship in accounting research. They should explore multiparadigmatic methodologies, mixed methods minded researchers in future research. Case studies with different theoretical or methodological approach allows the exploration and understanding of this complex issue. By including both quantitative and qualitative data, case study helps to explain both the process and outcome of a phenomenon through complete observation.

At last Aguinis and Glavas (2012) must be mentioned because they said that CSR research offers a golden opportunity to be more engaged with the real world and the future vitality and success of the accounting function in the organisations. This aim depends on making sure and visible the research-based knowledge done with relevance and usefulness.

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# Chapter 4

## Action Research in Practice– Based Doctoral Programs

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### **ABSTRACT**

*Action research is an accepted method that can be used effectively in practice-based doctoral programs to evaluate a multitude of questions and processes. This research method focuses on real-world problems and solutions, and is used in a variety of fields primarily in the United States, Australia, and the United Kingdom. This chapter provides an overview of action research, approaches and models, ethical concerns, best practices, criticisms of this research method, its use in doctoral education including dissertations and other research projects, and provides examples of action research in practice-based doctoral education in business, education, and healthcare.*

### **INTRODUCTION**

The purpose of this chapter is to present action research as a viable alternative for use in practice-based doctoral programs. Action research (AR) allows a doctoral student to conduct a research study in his workplace or community that is meaningful, as well as practical. This chapter provides a review of the current industry definitions, AR methods, criticisms, ethical concerns and best practices, views of AR in doctoral education, and addresses how AR is used across several disciplines including business, education, and the health sciences.

Zusman (2017) noted a significant increase in practice-based doctoral programs, particularly in health-related fields, and disciplines that never had doctorates before. There is diversity in the types of programs offered; however, in general, these doctorates are geared towards professional rather than academic careers. This phenomenon is occurring primarily in the United States (U.S.), the United Kingdom (U.K.), and Australia. Hawkes and Yerrabati (2018) reported the U.S. has the largest number of these types of doctoral programs with a total of 85 in 2018. Many are still research-based; however, this research tends to concentrate on practical rather than theoretical problems in the field. The credentials awarded for these degrees go beyond the traditional PhD credential. It has expanded into areas such as Doctor of Nursing

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Practice (DNP), Doctor of Physical Therapy (DPT), Doctor of Pharmacy (PharmD) and even Doctor of Audiology (AUD). In non-medical fields, it has expanded into degrees such as Doctor of Architecture (DArch), the Doctor of Information Technology (DIT), and Doctor of Business Administration (DBA).

Zusman noted these doctorate programs change the face of doctorate education in these countries, and the change is driven by three factors. The first is human capital and the need for highly educated workers in organizations who understand how to research and evaluate problems. The second factor is based on educational credentialism theory. Obtaining an advanced degree is a way for a worker to move up to a higher status in society. Practice-based programs offer an alternative for students who cannot pursue, or do not want to pursue, traditional academic doctorates, yet want to attain the highest credentials in their fields. The last reason is based on neo-institutional theories. This is a way for organizations to maintain legitimacy. The higher the level of the credentials of their employees, the more legitimate the organization. This is based on the premise that higher level credentials result in more job success and status for both individuals and companies (Zusman, 2017). However, the last two factors have resulted in a phenomenon called “degree creep” in many professions, particularly in the health care fields. While pharmacists used to only be required to have a bachelors’ degree, a doctorate is now the standard. A graduate degree has also become the standard in other health fields, such as physician assistants, and physical therapists.

Drake and Heath (2011) noted the professional, or practice-based doctorate, is equivalent to a PhD because doctoral researchers are required to meet specific criteria. This was echoed by MacClennan, Pina and Gibbons (2018) in business doctorates, as well as Bamberger (2018) in education doctorates. These researchers noted there is a lack of understanding about what a professional doctorate actually is, both from potential students, as well as those in academia. Part of this reason is because of the wide variation in these types of degrees where the doctoral dissertation can range from a research project to portfolios of previous student work. In addition, the practice-based doctorate tends to be only used in what is considered the “soft sciences.” The only professional doctorate which has come close to the perceived quality of a PhD is the doctorate in education which is considered more of a “hard science discipline,” or the EdD, a practice-based doctorate degree which was first offered in the 1920s. This is likely because this degree has been awarded for almost 100 years, while other practice-based doctorates (other than medicine and law) are much more recent.

## **BACKGROUND: WHAT IS ACTION RESEARCH?**

According to Sagar (2020), one organizational definition for action research (AR) is the one coined by the Institute for the Study of Inquiry in Education. The author noted action research “is a disciplined process of inquiry conducted by and for those taking action” (p. 1). The Glossary of Education Reform (2015) defines action research as “a wide variety of evaluative, investigative and research methods designed to diagnose problems or weaknesses” (p. 1). They noted it is a method of researching and implementing practical solutions and making improvements in the workplace or community. Action research uses a cycle of inquiry where the problem or question is identified, data is collected and interpreted, and a plan is developed to address the problem. The plan is then implemented and reevaluated until a successful solution is obtained.

McNiff (2017) provides an even broader definition of action research. The author defined it as a “practical form of inquiry that enables anyone in every job and walk of life to investigate and evaluate

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their work” (p. 9). However, this definition only considers one aspect of action research. In her definition, she does not address the use of AR in the community. She noted a key difference between action research and traditional research. In traditional research, a student or researcher does research “on” practitioners to see what experts say about a particular topic. In AR, a student or researcher does research “with” these practitioners and serve as “inside researchers” (p. 10).

Action research was first used in 1946 when Lewin used this approach to study how to resolve workplace conflict. He also used this approach to evaluate race relations. Since that time, it has proliferated in education and other fields such as healthcare and other social sciences (Beaulieu, 2013).

Ozer (2016) noted action research is effective for evaluating organizational and community problems in the present. In addition, it is collaborative and results in organizational learning. Participant experience is at the center of the research rather than removed from it. He posited action research has the five attributes of Mode 2 Research, which is a type of sociological research where multidisciplinary teams are brought together to work on specific problems in the real world to produce knowledge as noted by Coughlan (2007). They are:

- Knowledge is produced in the context of application.
- The process is multidisciplinary with a wide range of expertise available.
- Multiple departments or groups may be involved.
- There is social and/or organizational accountability.
- Criteria for application and quality control is established.

These factors are what makes action research a viable option for doctoral students.

Levin (2012) posited action research findings must be “trustworthy and relevant” (p. 134) in order to gain wider acceptance. He noted this can be a delicate balance since action research is dual purpose and consists of action and reflection. This combines emotional perspectives, including social and political, with the rigor of research in the workplace or community. It is both subjective and objective because it combines left-brain and right-brain skills which include scientific reasoning and empathy for others. The researcher must be able to step back from his place in the organization or community to rigorously scrutinize the findings.

Levin (2012) said the standard for AR must meet or except the criteria for other social science methodologies. This includes following the aspects of the research process which include formulating research questions, reviewing the literature, selecting a framework, collecting data in a valid way, and analyzing it objectively. Although the data cannot be generalized to other populations with different characteristics, or be used to establish cause and effect, following the scientific approach in study design and execution ensures the research is valid and truly contributes towards knowledge in the discipline. Levin notes the integrity of the AR researcher must remain grounded in ethical, moral, and professional principles that are inherent; however, he noted in most texts on action research these issues are not fully addressed. AR projects need to be able to stand up to the same scrutiny as other research projects even if a smaller population or intact organization, community, or classroom is used. In addition, because the AR researcher is also a member of the group, it is critical for the researcher to identify and state his personal biases, and how they may have impacted the research.

Borg and Gall (1993), well-known researchers in the field of education, reported action research allows a researcher to solve a problem at a local level using the standard steps of research (problem, research questions, introduction, literature review, methodology, results, conclusions and discussion),



but on a smaller scale. Yet, others such as Costly and Stanley (2011) note a traditional research format need not be used for a practice-based doctoral dissertation; documentation of process improvements and portfolios are also allowable. However, with current criticism of practice-based doctorates from PhDs and some researchers, these practice-based doctorates are more likely to gain acceptance if action research is used in the way it is defined by Borg and Gall.

Anderson and Herr (1999) suggested action research adhere to the following validities:

- **Outcome:** Was the research successful in meeting its intended purpose?
- **Process:** The research process/approach was standardized.
- **Democratic:** All parties who have a stake were included.
- **Catalytic:** The research transforms and deepens understanding of participants.
- **Dialogic:** The research is peer-reviewed.

These practices can increase acceptance of action research in doctoral education.

Norton (2018) discussed seven major characteristics of action research. It is:

- a social practice which takes place in complex contexts
- aimed towards improvement
- cyclical (the first intervention may not be effective, and the process may have to be repeated)
- systematic because it has designated steps
- reflective
- participative
- determined by practitioners

Theoretical positivist research is aimed toward establishing relationships and generalities. Unless qualitative research is used, it is usually not reflective. In addition, traditional research is rarely cyclical.

Noffke (1997) discussed three different dimensions of action research: professional, personal, and political. It is easy to define the professional and the personal. Action research allows a student or researcher to conduct research in his/her own workplace or community. For the employer, this process serves as a type of staff development for that employee. This provides relevance and a personal stake in the research. In addition, there is personal growth throughout the process. The political aspect is most often related to social justice. This aspect is often present in AR in dissertations in health care, social work, and even engineering fields.

## **ACTION RESEARCH APPROACHES AND MODELS**

There are various approaches to action research. The first, the classical approach, is a method to test research hypotheses and questions in a real-world environment. This model is often used in education and health sciences. Contemporary action research focuses on the social construction of reality and the specifics of local and organizational factors; therefore, it is also useful in the social sciences and business. In critical action research, improvements in business and other processes are the major aim of research. In all cases, action research is situational and contextual (Research Methodology, 2020).

Reason and Bradbury (2008) developed a typology for the different types of AR:

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- First-person: enables practitioner to evaluate an issue in his/her own life
- Second-person: enables practitioner to research issues of mutual concerns with others
- Third-person: enables practitioner to look at wider-reaching social systems and more universal issues.

Berg (2001) categorized three modes of action research. The first is a technical or scientific collaborative approach that uses a specific theoretical framework determined prior to data collection. One example in health education is framing a research project using the Theory of Reasoned Action, and then creating and evaluating an exercise program for seniors with heart disease based on this framework. The researcher then uses a valid instrument to measure participants' attitudes and behavioral intentions pre-and post-intervention to determine if the program was effective, and if these seniors are likely to continue with it on their own to improve their health after the study is over.

The second mode of action research does not utilize a predetermined framework; rather, it seeks to improve practice and service delivery. An example of this type of project would be changing the hours of a clinic in a poor, inner city neighborhood from traditional 8-5 Monday through Friday hours to extended weekend and evening hours to meet the needs of the community. The researcher could then measure patient satisfaction with the services provided with a survey.

The third mode presented by Berg (2001) is the emancipating/enhancing/critical science mode. In this model, structures, processes and social arrangements are evaluated to break down preconceived notions. An example of this research in education is implementing significant pedagogical process changes in a public school from the traditional education provided to a Montessori-style educational process. The researcher can then measure the performance on the usual state standardized tests used in secondary education, and standardized instruments of college readiness (as well as surveys of student and parent satisfaction) to determine if the emancipation from usual processes increased critical thinking and overall educational performance in these students.

A subset of action research was discussed by MacDonald (2012) who said participatory action research (PAR) is a qualitative research methodology that can be effectively used in research. Gillis and Jackson (2002) defined PAR as a "systematic collection and analysis of data for the purpose of taking action and making change" (p. 264). One key premise of PAR is the persons being studied participate in the research process design and execution, as well as dissemination of results. This is well suited to health care, education, social work, and community research.

Selenger (1997) identified significant elements of the PAR process conducted in the community. The first is identifying a community problem. The second step is to determine a goal that will transform and improve the lives of the research participants. The third criteria is participation of the community or population throughout the research process. These same steps were recommended by Price et al. in 2017.

PAR looks at problems in disenfranchised groups; examples can include the poor and the marginalized. The next step in PAR is to make community members aware of their own resources to increase self-reliance. Last, the researcher serves as a participant, facilitator and learner. Rather than objective detachment, PAR encourages active participation. One way this model could be utilized is in community smoking cessation program targeted specifically to low-income, inner-city teens. The community sets a goal of decreasing smoking in this group by 25%. Teens then participate in an educational process and form mentor/mentee relationships or support groups to provide encouragement for smoking cessation. Teens would also be educated on smoking cessation resources available within the community so the teens can access them after the research study is completed.

Pain, Whitman, Milledge and the Lune Rivers Trust (2010) developed a PAR toolkit for researchers, which identifies the typical stages of a PAR project, which was adapted from Kindon, Pain, and Kesby (2007):

- **Action:** Establish relationships and common agenda; collaborate on goals
- **Reflection:** Consider research design, ethics and accountability
- **Action:** Identify roles and responsibilities and design research processes and tools
- **Reflection:** Evaluate proposed research and potential outcomes
- **Action:** Collect data and encourage participation of all members; analyze findings and plan future action
- **Reflect:** Evaluate results and future actions.

Chandler and Torbert (2003) identified a typology of 27 different types of action research based on three dimensions: time, voice, and practice. The 27 typologies reflect different combinations of the categories in each of these three dimensions. The authors said when considering context of time in action research, there are three categories: past research, presence in the present, and the emergent future (Chandler & Torbert, 2003). Within these three categories, there are four territories of experience: the visible outside world, one's own actions, one's own thoughts and feelings, and the fourth is a combination of the other three dimensions. These dimensions include single-loop, double-loop, and triple-loop feedback.

The second category is voice. This categorization is similar to that of Reason and Bradbury (2008), and includes first-person, second-person and third-person. The final category is practice. First-person practices are defined by using outside empirical measures, or by asking feedback from others. This practice is within a person. Second-person practice is the way two or more people interface verbally and nonverbally around issues of mutual concern. Second-person practice includes active listening and evaluating other's viewpoints. This may include issues of power, participation and competency. Third-person practice involves many others at a distance from one another. This may include outside experts. Chandler and Torbert (2003) reported throughout these 27 types, various methods of validity assessment can be used. They proposed this typology to encourage the interweaving of quantitative, qualitative, and action research in research projects. The more typologies engaged in the project, the more valid the action research method is likely to be. In addition, they propose these methodologies lead to more timely changes and evaluation.

Norton (2018) proposed the following "spiral" (p. 69) of action research:

- **Observe:** A practitioner notices something is not as it should be.
- **Plan:** The practitioner decides to change something in his/her practice.
- **Act:** The change is carried out.
- **Effect:** The impact of the change is measured, and it is determined if it was effective or not.

In the observe phase, the context of the problem is analyzed, as well as the factors that could affect it. In the plan stage, the practitioner evaluates different interventions that might improve the problem.

In the act phase, the researcher implements the best intervention. This requires a significant review of the literature, so the practitioner selects a plan that is likely to be effective. In the effect phase, he assesses the change, and determines whether it improved the process or not (Norton, 2018). This is often done using research instruments, such as surveys and tests. It is important to note the same instrument

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types used in both theoretical qualitative and quantitative research are often used in AR. The difference is the size and diversity of the population used. In the effect step, the results are evaluated, and the researcher determines if the intervention was successful. A comparison with the literature conducted in the plan phase is used to document and compare the results to the findings. If the action did not improve the process, the cycle continues once again with a different plan.

## **ETHICAL ISSUES IN ACTION RESEARCH AND BEST PRACTICES**

Norton (2018) reported the same ethical practices used in theoretical research should also be used in action research. This includes obtaining consent from employees, patients, community members, or students through the use of informed consent. This must be done unless the researcher plans to use pre-existing secondary data. The informed consent should indicate the purpose of the research, the length of the project, and what will happen to the findings (if the organization will be identified in presentations or journal articles). Any potential risk, no matter how minor, must be disclosed. In addition, participants must be given an avenue to opt out (usually by contacting the researcher) if she no longer wishes to participate or include her data in the findings. The researcher must ensure that he will protect the participant's confidentiality. If a control and intervention group are used (which can be done in AR, often with intact classes or groups), and if the intervention is found to be advantageous, after the research is completed, the control group must also receive the intervention.

AR projects must go through Institutional Review boards or Ethics Committees at universities, health care facilities, and organizations just as traditional research does. Because the research is practical, this does not mean the researcher does not have to follow the ethical guidelines of research.

Action research that takes place within the context of the community can be even more challenging since laypersons are not always familiar with research ethics. In addition, any action research that includes young children will also require the parent's informed consent, which can often be logistically difficult to obtain. Any type of research that uses young children or other protected groups will undergo additional scrutiny.

When action research is used in the educational environment, there will be instances where the plan fails. When this occurs, the students should not be penalized. If the teaching methods were not effective and the information is required for the student to continue on, then the researcher has an ethical obligation to give this content in an effective manner to the students. Norton (2018) said in higher education, research can also have potentially negative effects on student learning. This can include trying interventions that do not work and over-using students in research. Students may feel they may have no choice other than to participate. He noted the key is to always try to be fair to students since they are vulnerable and dependent. In addition, Norton reported when using other faculty in research studies, this can cause additional problems. Colleagues may not be willing to open up and may be uncomfortable which can influence the working relationship. This can also occur in business organizations, in health care, and in the community. Using instruments with no identifiers and having an outside party conduct any interviews can alleviate some of these issues.

One of the major benefits of the AR approach is those being studied are active participants which empowers these individuals. Multiple individuals provide diversity in skill levels and expertise which can help facilitate the research process when they are involved. However, these strengths can also be weaknesses since participants may have difficulty remaining committed to the project over the long term.

As in any socially-based process, power imbalances can occur which can negatively impact the research progress. In addition, there may also be “jockeying for position” as multiple members may want to serve as leaders in the process. A last challenge is because this approach is both qualitative and socially-based, the legitimacy of this approach may be called into question.

## **Criticisms of Action Research**

The first criticism of AR in practice is it is a soft science. However, Beaulieu (2013) noted even researchers who are accepting of qualitative research, which is also a soft science, may not be accepting of AR. Clausen (2012) said AR was not scholarly because it was not grounded in an authentic, qualitative approach and did not seek overall truths. Rather, she relegated it to a professional development practice. Beaulieu counters this statement by noting although action research is often used in teacher education, it is rooted in scholarly research. AR does not lead to theories, hypotheses, or generalized findings; however, he notes it is about “contextualized truth seeking” (p. 30). AR seeks stakeholder perspectives rather than the perspectives of those who are outside of the problem or issue. The truths of the stakeholders can in fact be subjective, since human perspectives are always subjective.

Beaulieu also countered Clausen’s argument by noting quantitative methods are used by many researchers in action research, as well as grounded qualitative approaches. In fact, because AR is practical and solves real-world rather than often theoretical issues, it is a more practical and meaningful form of research for many practitioners. Norton (2018) posited perhaps the best argument for action research. Students who conduct what is considered true positivist research with a correct and distinct methodology often find their findings are of little practical use. AR is always of practical use.

McNiff (2017) noted AR should be used to contribute to self-understanding, understanding others, and understanding the greater world. It is not an appropriate research approach to use if the researcher desires to demonstrate cause and effect relationships or statistical correlations. AR specifically has some aspect of social intent. Koshy, Koshy and Waterman (2011) discussed how rigor and validity can be increased in action research. First, in some types of action research, the researcher must acknowledge his values and epistemological stance to ensure any biases are identified up front.

Another common critique of action research is the results cannot be generalized to other populations. Norton (2018) pointed out when one does action research and something works well, it is often recommended to other colleagues. In this case, the research conducted was adapted for a new population instead of generalized. This process may be even more valuable in practice since action research comes from practitioners who are aware of common problems in their discipline. It is also important to note qualitative research, which is more widely accepted by some than AR, cannot be generalized either.

Another critique of action research in doctoral dissertations is it is “research-lite” or “dissertation-lite.” This can occur if students are not required to utilize best practices and principles of qualitative and quantitative analysis. However, this need not be the case if students are still required to undergo all of the steps for a traditional PhD-level research project, but with smaller non-randomized populations.

The analysis and collection of data should be accomplished within the standards of traditional qualitative, quantitative research, mixed methods, and other accepted process/problem identification methods if traditional data collection instruments are used. This may vary significantly in process evaluation or the creation of portfolios in liberal arts field. It is likely in action research projects, students will stick to basic statistical procedures such as t-tests, and ANOVAs and will not usually conduct research using more advanced research techniques and designs.

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Although the populations in action research projects are not large enough to generate inferences and relationships, these statistical analyses can provide important data, particularly when triangulated with qualitative research in a mixed methods study. It is also important to point out that many novice researchers in PhD programs who have never conducted research before also stick to these more basic statistical analyses, particularly if they are planning on doing the statistical analysis themselves in lieu of hiring a statistician. Students can be taught theoretical research practice using action research; however, research power and population sizes may not be met because of the smaller volunteer or cluster samples that are often used. This does not mean students should not attempt to use them. There may be cases where power analysis requirements may be able to be met.

Random sampling usually cannot be accomplished in action research. This is one reason triangulation, using both qualitative and quantitative methods in action research, can provide a multi-faceted view of the problem or issue. The qualitative component can help support statistical findings that do not have sufficient power to establish effectiveness and may provide a better picture of how the problem is viewed in practice. In addition to traditional qualitative and quantitative statistical analyses, if a doctoral student wants to improve a specific process, then techniques such as SWOT Analysis (Strengths, Weaknesses, Opportunities and Threats), and Root Cause Analysis are accepted, standardized methods in many fields that can be utilized and included as part of an action research project.

Koshy et al. (2011) also highlighted an additional criticism of action research as a deficit model with negative connotations because it concentrates on what is wrong with a practice or issue. However, it is important to note that students with advanced education are expected to be able to evaluate and propose solutions and strategies for difficult problems. Action research provides an opportunity to turn a negative situation into a positive one by allowing student researchers to make a tangible, positive difference in their environments. This is a key component of professional development. Another important consideration is that overall, action research, in addition to being more relevant, can also be significantly more cost-effective for the student. Smaller populations are more easily accessible and incentives for the population to participate may not be required.

## **ACTION RESEARCH IN DOCTORAL EDUCATION**

Erichsen, Bolliger and Halupa (2012) pointed out that many people today seeking a doctoral program want evening or online alternatives so they can attend while they are still employed. This is one significant reason why a different pedagogical approach other than full time, traditional, theoretical doctoral study is needed. These students find community of practice models, which use action research, a mechanism through which they can make immediate changes in their workplace even before their doctoral degree is completed. Dissertation chairs do not have to be the subject matter expert on the topic of a student's dissertation. Rather, the faculty are experts at applied research, writing, and scholarly literature. This encourages collaboration between faculty and students which can develop a relationship where they can learn from one another. This is preferred by many adult learners who have life experience. In addition, it provides a mechanism by which those who are employed full time can still complete a doctoral degree.

Buss (2019) noted that action learning is frequently used in work-based doctorate programs in numerous fields. They said that although methodologies vary, contextually-based research investigations or measures of organizational change are often used. Both of these methodologies may use qualitative and quantitative methods. Most students in work-based doctorates learn how to do applied research. Although there are

other models in practice, most practice-based research does fall into the general area of action research, which is collaborative and participatory. Using this method, doctoral students learn research, writing, and analysis, as well as soft skills which will serve them well in their new roles in the workplace.

Earlier, Anderson (2002) reflected on the controversy about what actually constitutes research for doctoral students. While most everyone can agree that quantitative methods properly used qualify as research, there is a degree of ambivalence about the quality of qualitative and practice-based research even today. Anderson made the argument, “practitioner research can make contributions beyond the scope of traditional research (p. 40). He noted this is because practitioner research often has a reflective component. In addition to generating knowledge, he said this type of doctoral project also results in greater personal and professional growth for the student, and provides a new way of thinking about how to practically use research knowledge.

Vaughan, Boerum and Whitehead (2019) noted action research in doctoral education should be based in grounded theory that is central to transforming teaching and learning. Coghlan (2007) said action research in doctoral education has a dual purpose: it contributes to the ongoing learning of the researcher and the organization; it also contributes to the community of scholars in that particular discipline. He reported action research requires reflection upon reflection, as well as meta-cognition. These are advanced learning skills that enable doctoral students to think critically about real-world issues.

Coghlan said in researching issues using AR, doctoral students are still focusing on theory though “inquiry on action” (2007, p. 301). This was supported by Glaz and Heimann (2018) as in other words, at the same time students are researching theories associated with the practical aspect of the proposed action research project, they are diagnosing the problems, and evaluating potential plans of action. During this process, they are continually evaluating what they are learning. In theoretical research, although students are embedded in disciplinary research, they are not engaging in this continual reflective process. He pointed out the reflective process inherent in action research provides a critical link between theory, application and action which allows students to understand how their own knowledge is constructed. This is based on transformative learning theory, coined by Mezirow (1991) where learners engage in three different types of reflection: content, process and premise. Content reflection is reflection on the available theory behind the problem, and the symptoms of what is happening in an organization. Process reflection occurs during the planning stages as students evaluate strategies, process and procedures. Premise reflection is where they evaluate underlying assumptions. All three forms are crucial to the learning process in transformative learning and results in actionable learning.

## **Dissertation Research**

Action research provides doctoral students a dissertation experience that is authentic and real-world in nature. Doctoral programs prepare students to be scholars and practitioners in their discipline; however, many traditional doctoral programs are primarily theoretical in nature. Students are required to conduct research projects that may not have any meaningful, practical application. Instead, many students may select a dissertation project that is more efficient for them to complete within the allotted time, rather than one that is interesting and meaningful to them in their current or future vocation. In action research in doctoral programs, students usually complete the full cycle of inquiry once, and then propose other potential solutions.

One benefit of action research it is often conducted in the student’s workplace or community. This type of research requires a smaller samples and population sizes than are traditionally used in quantita-

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tive theoretical dissertations. The smaller population and sample may be easier for students to manage as novice researchers. Alpine and Norton (2006) noted the action research approach is an answer that can help to reduce the almost 50% doctoral attrition rates in some disciplines in traditional programs. However, action research is not as generalizable to other populations. Action research can contribute to a cadre of literature and best practices. Like qualitative research, practice-based dissertations and doctoral programs that utilize them have suffered complaints of legitimacy, particularly from those in the hard sciences. However, in social sciences, education, and health care, the research produced from practice-based models may be much more widely implemented and used than theoretical research since the product is useful. In 2002, Anderson called for the legitimacy of the action research model in doctoral programs and listed their benefits as a form of “knowledge production that is perhaps more generative... than traditional research” (p. 22). Vaughan and Burnaford in 2015 reported an increased use of action research in both EdD and PhD programs and noted legitimacy is no longer an issue; however, this is still not the overall perception. Title “snobbery” still exists and many still feel PhD programs have remained the gold standard for doctoral education.

Halupa (2017) noted the relationship between the dissertation chair and student becomes more of a mentoring or advising relationship than just a supervisory one when using AR. In addition, some programs allow the student to have outside experts in the specific discipline who can assist with the project as part of the dissertation committee as long as specific criteria are met. These type of projects are more feasible for part-time students who want to continue to work while completing the doctorate.

Friel (2019) noted back in 2007, 68.5% of dissertation problems were based on practice. Since that time, he reported a movement back to theoretically-based dissertations with professional practice dissertations decreasing to 56.1% in the more than 100 members of the Carnegie Project on the Education Doctorate (CPED). Beaulieu (2013) reported from the year 2001-2012 the number of dissertations that used action research in the United States almost doubled. Beaulieu also reported the number of publications and professional groups devoted to AR also increased. However, Osterman, Furman and Sernack (2014) reported although there was significant literature at that time that touted action research, they determined it was not a common practice use to satisfy dissertation requirements. Only 52% of chairs in EdD programs had ever chaired an action research dissertation. But in 2015, Vaughan and Burnaford (2015) reported increases in the number of dissertations using action research since 2000. Zusman (2017) reported professional practice doctoral programs have increased from near zero in 2000 to approximately 650 programs in 2015. Vaughan et al. (2019) also noted significant increases in the use of action research in EdD and PhD dissertations since the year 2000.

Coghlan (2007) noted an increase of practice-based doctorates in business, education, and nursing where middle and senior level managers use their workplace for their research. He said the action research process can help these managers solve actual problems because they are insiders and have access to data. This type of research is best used when the student wishes to stay in his current discipline and career path. He commented the student’s own experience in the organization is relevant to the research experience and it provides additional avenues for collaboration within the organization.

In addition, Coghlan (2007) reported students who seek to conduct action research have an “inside” view of the organization or community. He called this preunderstanding of the issue. This can be advantageous because the researcher knows the organization, its jargon, its processes and its people. It is easier for a student to complete research in a place where he already has established connections. This can result in richer data because the researcher can participate freely without suspicion. In addition, people are less likely to act differently because they are being studied (the Hawthorne Effect).



However, being a part of the organization where research is conducted also has some disadvantages. The researcher may assume and not probe as deeply into what others think and perceive because he has preconceived notions. Although it can be easier to obtain data, this can cause additional problems as well since in the context of the research project, the researcher may have to access data he/she was not privy to before. This results in a clash of professional and researcher roles and may result in other's resenting the researcher because he has accessed information previously unavailable to him. This plays into the issue of power and hierarchical boundaries in organizations. In addition, the researcher's loyalties may become divided in the process (Coghlan, 2007). In its most extreme form, Coghlan said others may view the researcher's actions as subversive and feel the researcher is trying to undermine current managers and departments. For these reasons, he commented it is important for those who are planning to conduct action research in their workplace to be politically astute.

Durak et al. (2016) noted there are three types of action research that are used in masters' theses and dissertations. The first is technical/scientific/collaborative which is the most positivist of the three types. The researcher selects a theoretical framework and uses the traditional five-chapter research format (introduction, literature review, methodology, results, conclusions) to craft the dissertation or to create an abbreviated form for a thesis. The second type is practical/mutual /collaborative/deliberative which is much more practice-oriented. It concentrates on problems and the causes of these problems. The third type is emancipating/enhancing/critical science experience and knowledge. In this type, practitioners critically evaluate their studies to acquire new experiences and knowledge; this usually includes a portfolio. Durak found 57% of theses and dissertations that used action research used the first type, which is the most positivist. The third type, which is the least like traditional research, was only used in 7% of theses and dissertations.

Anderson (2002) noted part of this conundrum about practice-based dissertation research is it is not as clearly linked to specific methodologies, while qualitative research is based on anthropology and sociology research. However, action research is an approach that does have a basis in research and guidelines for quality and validity, which includes typology and guidance for how this type of research should be conducted. Unfortunately, he notes, practice-based research approaches, other than action research, used in humanities research tends to be narrative and based on personal and professional experiences. These are even less likely to be accepted by PhDs than action research, which has been used for over 60 years. However, it is a type of practice-based doctoral dissertation, so AR and these methods are often painted with one brush. However, one reason Anderson expressed AR has a basis in traditional scholarly research is because action research often requires inclusion of cross-disciplinary literature (for example those in health care may draw from pools of education research); this is not often the case in humanities-based practitioner research.

In addition, students in practice-based doctoral programs undergo the same research experience in formulating a research problem, research questions, a data collection and analysis process, as well as summarizing and applying findings. However, in AR, they also gain practice in creating and implementing an intervention, which is not usually done in traditional dissertation data collection using tools such as surveys and secondary data sets.

## **Action Research in Business Doctoral Programs**

Banerjee and Morley (2013) reported by 2000 in Australia there were 21 Doctor of Business Administration (DBA) programs (50% of universities); this decreased to 18 by 2013 because of low graduation

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rates. One reason noted is the majority of these programs did not have sufficient coursework in research, such as AR, to prepare students for the dissertation process. These degrees were created as a response to perceived disconnects between theory, which was generated by PhDs, and actual business practice. They noted in the new economy of the 21<sup>st</sup> century, doctoral students in business need new skill sets. In the U.K., about 37% of universities offered DBA programs; however, in the U.S. less than 10% of universities offered such a program. These practice-based programs are not found throughout the rest of the European continent, although some schools offer a practitioner-based track. In these DBA programs, the research component comprised anywhere from 30-70% of the degree. Most programs required a dissertation with a research component; however, others required research portfolios with three or four long papers. This has caused significant contention about whether DBA practice-based research is of doctoral quality. Action research is one way this gap can be bridged. Action research results in the “actionable knowledge” Banerjee and Morley (2013, P. 174) noted is required for today’s high-level business practitioner. These skills allow students to measure and determine if solutions are truly effective or not.

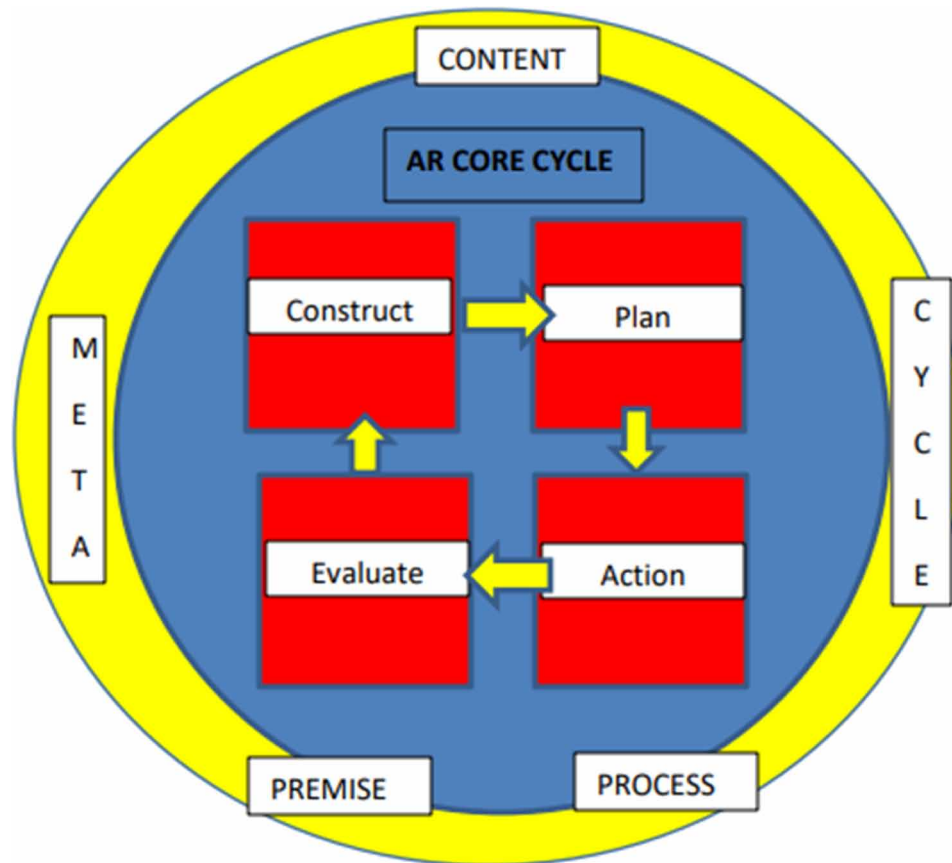
In business, AR is about effecting change that occurs in real time. Coghlan and Brannick (2014) pointed out organizations are social constructions influenced by human perceptions and actions (see Figure 1). The problems in organization are complex and often “messy” (p. 2). They note AR in business allows practitioners to change their organizations for the better and create actionable knowledge. They posit in any AR project there are two parallel research cycles. The first is the core cycle where constructing, planning action, taking action, and evaluating action occurs in the organization in a repeating cycle. The second cycle is reflection on learning or meta-learning. These researchers posed this meta-cycle of content, process and premise reflection is where the focus of the practitioner dissertation in business using AR should lie. This is because it is in this meta-learning process where connections are discovered which leads to greater understanding of the issue and possible solutions.

## **Action Research in Health Doctoral Programs**

In doctoral education in health care professions, AR is most often done to improve conditions and practices in the health care environment. Because health care professions are diverse and specialized, it is important for experts in medical fields to be able to conduct research that is meaningful and can be implemented immediately. Hart and Bond (1998) noted in health care and other types of social research, the action researcher acts as a catalyst, but actions are jointly planned by both the researcher and client/patient. In health research, there can be numerous stakeholders including other medical professionals, the community, physicians and administrators.

Medicine is an art, as well as a science, and nothing is absolute. Although statistical relationships can be identified between factors and specific health conditions, these requires extremely large population pools because health is impacted by patient diversity in genetics, habits, and environment. Doctoral students in the health professions usually cannot access large populations to conduct original research. They are then left with secondary data collected in the past in large databases. Some examples include the Center for Disease Control Behavioral Risk Factor Surveillance System Web Enabled Analysis Tool (EAT), and Chronic Disease indicators (SMART) (CDC, 2020) However, a significant amount of health databases are created and maintained by for-profit companies, such as the Rochester Healthcare Information Group or the Kaiser Family Foundation. Other databases, such as the National Cancer Database, only allows access to Commission of Cancer accredited cancer programs. Many students want to conduct original research because they have a specific area of interest. For these reasons, AR is an

Figure 1. Parallel Action Research Cycles (Coghlan & Hannick, 2014)



effective way to build a cadre of research on professional practices and interventions that are effective and discovered using smaller populations.

Terry (2012) noted AR is commonly used in the Doctorate of Nursing Practice degree that emphasizes advanced clinical practice, in addition to relevant research in the discipline. McNiff (2017) provides the following comparison of traditional research questions compared to AR research question in graduate nursing research (p. 10-11).

**Traditional Research Questions**

- What is the relationship between nurse knowledge and patient care?
- Does nurse manager style impact nurse productivity?

**Action Research-based Questions**

- How do I study nursing practice to benefit my patients?
- How do I improve my management style to improve the way I lead other nurses?

As noted in previous sections of this chapter, AR looks at results rather than just statistical relationships.

Lingard, Albert and Levinson (2008) said AR is an appropriate research method for health professions. In health care, AR is also called community-based research or collaborative inquiry. Research in

## **Action Research in Practice-Based Doctoral Programs**

health care often revolves around patients or community members. These patients have to be willing to change their behaviors in order to improve their health and wellness. Because this is a collaborative relationship, AR is an effective choice in fields such as health education, nursing education, and health administration. Lingard et al. said it is an “iterative process...to enact positive change...with an egalitarian approach to power” (p. 461).

Koshy et al. (2014) wrote AR is a key means in which health care workers can evaluate their own practices and beliefs within a dialectic view. It is a way distortions in thinking and communication can be overcome in such a high stress environment where patient lives and health are on the line. This is because those in the health environment need to concentrate on effective solutions in real time. In AR, reflection is linked to action and social change.

In 2018, Cordeiro and Soares conducted a scoping review of AR literature in the health field. They noted the 124 studies they reviewed varied significantly in methodology and research framework ranging from knowledge building to social change data. Some examples of current health research studies that used AR is Park, Change and Lee’s 2017 study which looked at the application of the Internet of things in hospitals. Peake, Jackson, and Usher (2020) looked at culturally appropriate health resources for aboriginal populations. There are numerous other research studies in the health fields that use AR. Because the health field is so diverse, AR used in the health field is diverse as well.

## **Action Research in Education Doctoral Programs (EdD)**

Ponte (2007) defined research in pedagogy as a type of praxis, which means teachers should continually link three types of knowledge: ideological, technological and empirical. She noted AR is effective in education for solving immediate problems and learning and sharing from practice. However, she also reported AR helps to build the cultural traditions of society. This point of view was supported by Edwards-Goves and Kemmis (2016) and Sameshima, Maarhuis and Wiebe (2019).

However, AR can be based in grounded theory, as well as practice-based. Friel (2019) reported use of qualitative methods increased almost 10% from 2007-2017. However, the number of EdD dissertations that used qualitative methods decreased 15%, while they increased 16% in PhD in Education programs. Friel also reported professional practice as the origin of the problem among higher education dissertations in Carnegie Project on Educational Doctorates (CPED) institutions increased from 85% in 2007, to 92.3% in 2019. This reflects the movement in this field towards practice. However, Friel’s points out with this movement to practice-based problems, there is still a movement in using positivist research methods, including qualitative and quantitative research. In these practice-based doctorates, AR can fill this role because it uses both positivist methods and practice-based problems.

Wetzel and Ewbank (2013) evaluated their doctoral dissertation process in an EdD program that used AR. They used a theoretical framework of transformational learning theory as outlined by Mezirow (1991) to create the program curriculum. These researchers evaluated innovations in the process as students moved from theory (when they started the program), to practical application in the dissertation process. In this program, students conducted three cycles of AR in their coursework before they were required to use it in the dissertation. This provided students sufficient background to be successful. However, they noted some significant problems that can occur in practitioner-based dissertations. When a dissertation project is based on a problem in the workplace or community, the student’s dissertation timeline does not always correlate with the employer or agency, which can cause significant delays. Another problem occurs when students change jobs.

While supervising over 80 students in a practice-based doctoral program, I had two students who lost their jobs due to downsizing in the middle of the dissertation process. One student regrouped and started a different project at a second place of employment, and then lost her job again. She had to start a third time. Both students did finally complete their dissertations and were awarded their degrees, but this can cause significant undue stress on the student and can prolong time to dissertation completion significantly. The student that lost two jobs took an additional two years to complete her dissertation because of this issue. Another student had approval for her dissertation project and was halfway to completion, when leadership in her organization changed and the new leader refused to allow her to complete the dissertation. This student also had to regroup and lost several months but unable to find a new suitable project and complete her study. Other students changed their topics of study numerous times and delayed starting the project because of indecisiveness, however, this is also a common problem in traditional research-based dissertations, as well as AR.

Zambo (2010) describes the process of including AR as a signature pedagogy in the education doctorate program at Arizona State University (ASU). This program was based on the recommendations of the Carnegie Project on the Educational Doctorate (CPED). She noted some detractors, particularly Levin (2005) critiqued EdD programs as watered down doctorates that do not prepare school leaders to take action. However, Zambo notes this degree is what is needed for the next generation of school leaders when these programs are designed with AR as a signature pedagogy that frames the educational and research process. In the ASU program, students are taught AR principles in 12 hours of their core courses and 9 hours of their research courses. In addition, it is also embedded into the learning-scholar-community courses which comprise six hours. Each student must perform an AR cycle every semester in preparation for their 12-hour AR capstone where students select a problem to solve at their worksite. Zambo acknowledged this doctoral research project was a newer type of research in the doctoral realm when she wrote her article. She researched a core group of 20 initial graduate of this program. She said the AR focus enabled the ASU students to become “stewards of practice” (p. 262). In addition, it prepared them to do the type of research that will be required in their own school districts after graduation. She said AR dissertations, “challenge the status quo” (p.270) and are likely to be a source of debate in continuing years. She was correct, because 10 years after she published her study, AR is still under fire by traditional researchers.

## **LOOKING FORWARD**

Because students and organizations are demanding them, practice-based doctoral dissertations are here to stay. Their use may ebb and flow as most educational practices do. However, the use of AR in practice-based dissertations will likely grow because it is the method that is most widely accepted by positivist researchers because it uses a similar structure, validity practices, and procedures used in qualitative, quantitative and mixed-methods research. When a cadre of information is created on a topic in a discipline, even with the smaller populations and samples used in AR, this can eventually lead positivist research such as meta-analyses which can lead to more generalized findings and best practices.

## **CONCLUSION**

Action research is a viable research method for use in practice-based doctorates. As a method, AR adopts both qualitative and quantitative methods, as well as grounded theory, which form the basis of traditional PhD research. The difference is AR mainly uses smaller samples often comprised of volunteers and intact groups and cluster samples. In addition, AR is a cost-effective and recognized methodology for doctoral students to conduct novice research. AR also concentrates on practice rather than theory, which increases the relevancy of the research for both students, as well as the organization or community of which they are a part. Resistance in the positivist research community is likely to decrease as AR becomes an even more recognized and viable method used in doctoral education and dissertation research.

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## **KEY TERMS AND DEFINITIONS**

**Action Research:** This is a practical research technique used to evaluate problems and issues in the workplace and community; the key difference between action research and traditional research is the sampling and size of population used.

**First-Person Action Research:** A research process where participant evaluates using an established method his/her own life.

**Insider Research:** Research which is undertaken by a member within the community, organization or group being studied.

**Participatory Action Research:** A subset of action research where participants being studied participate in the research process.

**Practice-Based Doctoral Dissertation:** Non-traditional dissertation process where students engage in research in their workplace or community; this includes programs such as Doctor of Business Administration and Doctor of Nursing Practice.

**Second-Person Action Research:** Research process where participant evaluates issues of concern for himself and others.

**Third-Person Action Research:** Research process where participant evaluates universal issues of wider social or organizational concern.

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# Chapter 5

## Teacher Activities in Adaptation of Innovative Study Methods at University: Theoretical and Practical Implications


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### ABSTRACT

*The emergence of various types of educational innovations affect and change not only students learning methods but also teachers' competences and activities. Innovative study methods (ISM) are characterised by novelty to their implementers. Adoption of innovations as well as innovative study methods are faster and better when they are close from cultural-, social-, and value-based perspectives (i.e., when they are adapted). The teacher should have the appropriate competences to adapt, modify educational innovations, as well as study methods according to the students while at the same time not departing from the study program aims and study subject (module) results. The chapter aims to find answers to the research questions: What are the peculiarities of teachers' activities in adapting innovative study methods? How does the adaptation of an innovative study method affect other elements of the pedagogical system course? What are the possible variations in the process of innovative study method adaptation?*

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## INTRODUCTION

### Theoretical Background

#### Concepts of Adoption and Adaptation

The innovative process in respect to social innovations consists of *4-i-process: idea, intervention, implementation, and impact* (Hochgerner, 2013). An idea of how to deal with the challenges arises in the beginning. Then the most advanced solution and/or suggestion of intervening and solving the problem is sought. In the second stage, several ways of solving the problem can be combined, such as relying on scientific research, combining certain already existing practices in new ways and by changing attitudes or convictions in order to achieve new behaviours (Hochgerner, 2013). The implementation stage includes the dissemination, acceptance/rejection and usage of the innovation. Social innovation goes through change continually as it undergoes various experiments, modifications and transformations. Therefore, it is never considered to be the finished product. In the last stage, innovation is accepted (if it has not been rejected), thus becoming regular daily human activity with a social impact.

In order to evaluate the impact of innovation, it has to be accepted by those users to whom it is meant to be disseminated. The acceptance of innovation is called **adoption**. According to Denning (2012), Zolait (2014), the process of adoption is the stage when the solution to accept or reject the innovation is made. In this stage, users decide whether to learn, accept and use or whether reject new practices, new products or new ways of activity. Hochgerner (2013) agrees that this stage (adoption) is crucial because it determines the success or failure of innovation; this stage determines whether all the efforts were worth it and paid off.

#### The Essence of Innovation Adoption

The adoption process is divided into further stages or parts. The most prevailing research analysed and discussed in scientific literature (Janiunaite, 2007; Banyte, Salickaite, 2008; AbuJarad, Yusof, 2010; Nemoto, Vasconsellos, Nelson, 2010; Barden, 2012; Gounaris, Koritos, 2012) is Rogers' *Innovation Diffusion Theory* where the process of accepting/rejecting innovation and the variables that influence this process are discussed. The variables are related to the features of innovation, strategies of implementing innovation, communication channels, nature of social system and change agent role. This theory underpins the process of innovation adoption.

Rogers (1995) claims that the process of innovation adoption consists of several stages; knowledge, evaluation, decision and confirmation. In the first stage, information is gathered and the necessary knowledge about the innovation is acquired. The second stage entails the evaluation of the innovation. The questions that are asked include inquiries of whether it will help to solve the problem, how it will be used and whether it will be useful and possible to be applied in the specified context. During the third stage, the preliminary decision is made of whether to accept or reject innovation. In the fourth stage (confirmation), the preliminary decision can be either confirmed or not confirmed. It means that after the first decision, innovation can still be adapted and tried out again if necessary; and then the decision can be made of whether to accept it or reject it.

Hochgerner (2013) emphasises that social innovations cause great instability to those who accept them because they take them out of their comfort zone (Serdyukov, 2017) and make them change their

established activities (Serdyukov, 2017). Innovations often cause not only behavioural change but also change of thinking, values, convictions, etc. Therefore, adoption of social innovations provides more stability to their users. Social innovation which is adopted, modified and transformed according to the features of its users is safer and easier to accept.

Rogers (1995) agrees that innovation is accepted when it is adopted according to the context, possible to be managed and used in daily activities, emphasising that it is essential for the innovation to be suitable and useful to its users and bring some value to them. In respect to social innovations, a lot of attention is given to trial and adaptation actions because social innovation is most often related to people (Warford, 2005) to whom geographic and cultural adaptability, usefulness and compatibility of the innovation with their values and attitudes are crucially important. *The question arises what the essence of adaptation is about.*

## **The Stages of Innovation Adaptation**

Hutcheon (2013) analyses adaptation through adaptation and interpretation of art works. In her opinion, our world is made of several billion different people who live, imagine, understand things, interpret everything and act differently. All systems, activities and products have to meet each person's needs. Things have to be adapted to them. The author explains adaptations as moving of the same content into another body (design) and getting a new interpretation or additional value and/or advantage. However. The process of such 'moving' is complex and highly complicated as it is based on (re)interpreting and (re)creation. During this moving process, the main idea/purpose/principle has to be maintained; but the new form has to be different from the previous one that met the users' needs. Hutcheon (2013) also adds that our memory keeps those elements that are repeated to us in a new different form. According to Hutcheon (2013), adaptation is an extremely complicated process.

In the case of social innovation, final products ready for permanent use are seldom created (Hochgerner, 2013). In most cases, social innovation is constantly adapted even when it was rejected. Social innovation quite often participates in constant adaptation process because it has a lot of freedom in the implementation process when it meets flexible interpretations and different interests in different social environments. Over time, changes in social innovation happen because of daily usage and experimenting with it. Adaptation is divided into three types: adaptation of form and structure, adaptation of behaviour, and adaptation of psychological elements. One or several types of adaptation can be used at the same time.

Beck, Kosnik (2006) also claim that the stage of adaptation happens when innovation is taken over from other countries, organisations, groups and cultures and changed, corrected or adapted in order to be useful in a different context.

Hoover (1990) determined five essential steps necessary when adapting a curriculum: determining the need of adaptation, distinguishing elements to be adapted, choosing teaching/learning techniques, implementing adaptation, and evaluating the adaptation process. He mentions that innovative study methods (ISM) are part of curriculum. Therefore, it is important to determine what needs to be adapted and how it can be adapted, implemented and evaluated. In 2010 *KidsINNscience Consortium*, universities organised the project *Adaptation of Innovative Methods in Science Education* during which the adaptation process of innovative methods was overviewed (Aleixandre, Santamariá, 2010). This project relied on the premise that adaptation consists of several essential stages: *analysis of ISM, exchange of supplementary materials useful for ISM adaptation and implementation (prepared by ISM developers), setting up what and how to adapt, and innovation adaptation and trial process.* When adapting, it is agreed to discuss

the ISM basis for cultural, social and values systems and determine what implementation strategies could help in the process. Teachers often find ISM themselves or they are asked to participate in it. What steps does adaptation process take then?

Hord, Stiegelbauer, Hall, George (2013) analyse adaptation by presenting four-step change map. The steps comply with the main actions: *decide how the methods will be applied in the practical way, make a list of the components to be adapted, consult ISM developers and/or implementers regarding the specific components to be adapted and try out ISM with the adapted components*. The aim of the first step of innovation adaptation process is to determine its elements and find out how IST should be applied practically. In order to have a more detailed picture, it is important to analyse a lot of ISM sources and discuss the main components to be adapted both with the developers of innovative study methods and the consultants of its implementation process (if any). After the first step, a list of ISM elements to be modified can be made. After the identification of the elements that have to be adapted, the decision of how they will be applied has to be made. The consultations with the developers/implementers/consulters of innovative methods can be organised regarding any variations of the methods application. Problems may arise in such cases when ISM developers are not available, cannot be reached or when they do not provide a quick feedback. In the fourth step, the initial working draft of the list of elements to be adapted is used to perform surveys in order to determine the real ISM usage. Such surveys often reveal new elements that need to be adapted, adaptation variations and dimensions. They can change and be different depending on each user's adapted list of ISM elements. Later, the results are reviewed, and the main tendencies of the elements for adaptation are determined. If necessary, less important minor variations are rejected when there are too many categories. After making the list, practical ISM implementation adaptation process begins by practically testing the variations (Hord et al, 2013). Similar stages of the adaptation process are described by Blonder, Kipnis, Mamlok-Naaman, Hofstein (2008). They analysed how the adaptation process of a selected module was carried out in accordance to the predefined adaption technique (done through the bottom-up approach). They distinguish the following stages: *ISM selection and adaptation based on students' knowledge, motivation and interests as well as teachers' experience and presentation of the adapted ISM model to its developers and other colleagues in order to receive their advice and recommendations*.

Therefore, the main stages of adaptation consist of **the setup of the elements to be adapted, modification of the elements to be adapted, testing the adapted ISM and analysis of the adapted elements**. These elements are performed in an uninterrupted cycle. Further, the analysis of teachers' activities in different stages of adaptation will be discussed in greater detail.

## **Teacher's Activities in Adaptation of Innovative Study Methods**

**Setup of ISM elements.** Hord et al. (2013) claim that adaptation begins from foreseeing the elements to be adapted and an idea of how they have to be adapted. These authors emphasize four main steps necessary to determine the elements which have to be adapted in the implementation of ISM. The aim of the first step of determining the elements to be adapted in the innovation adaptation process is to find out how ISM should be applied practically. In order to have a more detailed picture, it is relevant to analyse a great number of ISM sources and discuss the main components to be adapted both with the developers of innovative study methods and the consultants of its implementation process (e.g., assistants of faculties/departments/research groups, programme coordinators, supervisors, etc.) if they are available. After the first step, a list of ISM elements that have to be modified can be made. Laurillard

(2008) claims that the elements to be adapted include results of the module, choice of teaching/learning duration and the size of the group, sequence of tasks, roles, evaluation methods, sources and materials. In the second step, a small number of users is chosen (representing the diversity) and various ISM usage model are discussed. Towards the end of the second step, the list of elements set for adaption is modified and supplemented again.

## **Modification of Elements to Be Adapted**

A detailed description of the most important actions that have to be taken in order to adapt any learning/teaching content, activity, method or technique is provided by Causton, Udvari-Solner, Richmond (2016). These steps are relevant in the adaptation process of innovative study methods as educational innovation. According to the researcher, individual educational students' aims and objectives have to (1) be identified. Then it is necessary to (2) determine the topic(s) and (3) activity(-ies), (4) way(s) of learning/teaching and select and apply other (5) activity design elements: layout of the teaching material, lecture format, strategies oriented towards students, methodological goals suitable for the lecture, modified material and other. Then according to the author, we have to check the validity of our actions.

In this case, Hord et al. (2013) claim that after the identification of elements to be adapted, we have to foresee (third step) *how they will be applied*. Application includes both the external ISM components (*action system, materials, object change process, results*) and internal elements (*motivation, awareness, memory, level of thinking, imagination, emotions, expression of will*). According to Hord et al. (2013) application is characterized by reviewing the coherence of internal and external variables with the results sought by the subject. Then the developers/users/consultants of the innovative method are consulted about the observed variations of the usage of the method. These consultations are crucial because developers can explain the processes they observe, adjust certain elements, and modify usage variations and discrepancies between their vision and users' visions. The problem arises when ISM developers are unavailable or when they are not able to provide fast feedback. In the fourth step, an initial working draft of the adaptive elements list is used in surveys to determine the actual use of ISM. These surveys often reveal new elements that have to be modified, adaptive variations and dimensions. They may vary and be different according to each user's list of different ISM elements to be adapted. Subsequently, the results are reviewed; and the main trends of adaptable elements are determined by excluding, if necessary, minor irrelevant variations when there are too many categories formed. The compilation of this list is the beginning of practical implementation of any changes in ISM adaptation (Hord et al. 2013).

Sabine & Beate (2005) highlighted the importance of being able to combine the curriculum, the method and the tasks. Each course (module) taught has its own core contents conveyed with the help of ISM, i.e., the method helps to convey the content. Each innovative study method includes certain activities, tasks and actions that need to be flexible in respect to the subject matter, i.e. they have to be adaptable. Modification of tasks, activities and evaluation methods is necessary depending on the learning outcomes. The author also points out that good examples are of great importance to students who are able to empathize and use their imagination. They should be adapted in accordance to the tasks and the groups of students.

Blonder et al. (2008) also agreed that the content of the teaching material, the aim(s) of the method and the activities are most often adjusted. To be more precise, the content of the subject is adjusted to ISM in such a way that ISM would help to achieve the most essential objectives and outcomes of the

## ***Teacher Activities in Adaptation of Innovative Study Methods at University***

course. When the method is adjusted to the content of lectures, the activities, tasks and practices are also adjusted. And the assessment system is adapted in parallel with the adapted tasks, activities and practices.

Jugo, Kovacic, Slavuj (2016) argue that there are three most important components that need to be adapted for teachers when accepting innovation in the teaching/learning process. They emphasize the importance of harmonizing the content and the activities of the subject and adapting the assessment process. It is important to develop the most essential activities so that they match the learning outcomes. The evaluation system has also to be adapted to what activities were organized, what content was taught and what it was aimed at.

The Learning/Adoption Trajectory Model (LAT) developed by the Boulder Valley Internet Project Leaders also highlights the ability of teachers to modify and adapt innovation to the size of the class in the stage of accepting/rejecting the innovation (Sahin, 2005). Sahin (2005) emphasizes that four adaptable ISM components become important in the LAT model: the content of the study subject is combined with the implementation of the method while the tasks, the time to perform the tasks and the evaluation of the tasks are adjusted. It is important to be able and to manage to adapt the content of lectures to the method and change the tasks and the time given to do the tasks based on the new method and apply it based on whether the study process is carried out in semesters or cycles. The assessment system should be suitable for identifying students' knowledge and achievements and linking it to what students were seeking to learn.

Wright (2005) relying on the research carried out by Ebeling, Deschenes, Sprague (1994) provided nine adaptation types depending on the object of adaptation: adapting the way of giving the task to the student (online, oral, printed tasks, etc.); adapting the ways how students can perform the task; adapting the time interval given for the completion of the task, studying time and testing; selection of suitable tasks (type of problem, rules) based on students' skills; anticipate and consider the level of personal support for students with increased needs; choose topics that students have to learn; adapt teaching/learning content; adjust goals and results; provide different instructions and tools to help students achieve their learning goals.

### **Testing Adapted ISM**

The testing of an adapted ISM may be different depending on two things: (1) whether the adapted ISM will be tested all at once or gradually; (2) whether it will be tested as the whole or only one of its parts will be examined (external or internal structure, e.g., action system or materials) (AbuJarad & Yusof, 2010; Serdyukov, 2017). For example, all traditional classes switch to the design thinking method. In this case, the teacher needs to have a high level of competence and be highly flexible and adaptable to new unspecified situations in order to be able to adapt and test ISM in this way. An example of a gradual adaptation is when students are initially presented with one adapted ISM element and other elements are added alter. In this way, all ISMs are gradually introduced and tested. For example, in order to organize lectures by relying on problem-based approach, one activity is initially organized in such a way that the problem is solved; then it is followed by another problem-solving activity as a continuity to the previous activity and so on. This way, one or more complex problems are solved during the course; and the course is modified to support problem-based approach.

In the case of gradual adaptation, there is the risk that the method will not be completely adapted because a certain stage of the adaptation might fail; and the failure might not lead to the adaptation of the method to the end (AbuJarad & Yusof, 2010). On the other hand, gradual innovation is less risky



because it is more likely that it will be more favourably accepted by students; therefore, it is a safer option of ISM adaptation.

ISM can be adapted and tested in two ways: either the whole method or only some of its elements are adapted (Wall & Ryan, 2010). Adaptation and testing may not cover all of ISM. When only a certain ISM element is adjusted, modified and tested, we can call it **partial** adaptation. For example, by partially adapting and testing educational innovation in distance learning, only certain lectures (not all of them) of a subject (module) are remotely reorganized.

## **Evaluation of Adapted ISM**

Udvari-Solner (1994) emphasise that it is especially important to evaluate adaptation. In this respect, the feedback from students and colleagues gives some insights into the expediency and accuracy of the process. According to Lourillard (2008), feedback can include teachers' reflections, students' feedback and peer review. Reflection in the context of the adaptation of innovative study methods is a generalization of an active intellectual activity done by reviewing new experiences related to ISM application. The analysis of the experience gained can help to develop, improve and change behaviours with regard to ISM adaptation as well as help to take a fresh look at the perspective.

Ni, McKlin, Guzdial (2010) think that sharing experience gives new insights and knowledge on how to test and adapt ISM. The researchers claim that successful ISM adaptation and testing (sometimes only of certain details or parts of the method) encourage faster ISM adoption. MacKenzie and colleagues (2010) performed teacher empowerment research and determined that sharing experience was especially important in order to empower teachers to do more advanced teaching activity that is of a higher quality. By communicating and sharing their experiences, successes and failures with regard to ISM adaptation, teachers can communicate a lot of useful information verified through their personal experience, motivate and engage their colleagues to do the same activities.

As teaching/learning process is based on continuous interaction between the teacher and the student, the students' feedback on the adapted ISM version is of particular importance in assessing whether ISM was properly adapted and whether any further changes are necessary (Dabbagh & English, 2015).

## **RESEARCH METHODOLOGY AND SAMPLE**

### **Research Method, Sample, Instrument**

Empirical research aims to identify the activities of innovative study method adaptation in the context of the teacher's activities, in example, determining what variables affect them and then identifying and substantiating the variations of the teacher's activities while adapting innovative study methods. The decision was made to carry out the research by using case studies when one or several cases of social problem expression were analysed.

During the stage of the first empirical study, the objective was to define the number of cases and key criteria for selection. An X university has an established Edu\_Lab and other programmes dedicated to teachers. On this basis, the experts of the Lab together with teachers have integrated ISM into study subjects (modules). In 2017–2018, the work was carried out with two innovative study methods – Design Thinking and Case Study. The methods were selected as the cases in the first empirical research in

order to specify that the empirical research will be based on the study of multiple cases. Having chosen particular cases that are applied in a specific organization, it is easier to define the limits of the cases, which is important during case research. In the study of multiple cases, the objective is to study a wider issue and several cases rather than choose one single case for a more profound analysis (Creswell, 2007). It is often suggested to choose different cases for such a study that would allow revealing more diverse aspects of the problem, process or event. The selected ISMs (Design Thinking and Case Study) are different enough; that is why it is supposed that this will help to carry out more thorough analysis in terms of case analysis of this research. Teachers (12 participants in the study), all of whom were full-time employees, were selected by using the target sample selection method. The research instrument was developed on the basis of the stages of innovative study methods adaptation as defined during the analysis of scientific literature.

The research data was collected by conducting document analysis (ISM descriptions, matching documents, Moodle environment and study subject (module) descriptions/cards and partially structured interviews (with ISM teachers and experts presenting their training). The data collected during interviews was analysed by using quantitative content analysis and deductive qualitative content analysis. Quantitative content analysis allowed determining the grounds of a number of steps of the ISM adaptation process and the main activities of the teacher during these stages. Deductive qualitative content analysis enabled analysis and description of the ISM adaptation process in the context of the teacher's activity, which allowed distinguishing the peculiarities of the teacher's activities in adapting to ISM.

***Cases of the research.*** In 2015–2016, experts from Edu\_Lab centre of an X university acquired necessary knowledge about the implementation of the methods in the Education Innovation Lab, Ivey Publishing School, Alborg university and PBL academy. Since 2016, the Academic Competence Centre for Teachers has started to organise trainings for teachers who want to apply the design thinking, case study and other methods in their classes.

ISM reaches teachers in three ways. Teachers can be invited to register to group trainings or they can register to the trainings under their own initiative. Such trainings are organised 8 times per year. In other cases, the initiator is the administration of the university. Consequently, there might be some pressure and compulsion to implement ISM. On the other hand, teachers are motivated to implement new methods; and the faculty's financial support is a form of support for doing this. The experts of the centre have mentioned one more way of introducing the methods: once a month, an informal meeting – teachers' café – is organised where teachers and experts can share that experience, observations, opinions and examples. The meetings are geared towards changing attitudes, skills, relationships and values, and bringing together like-minded people.

In 2017, the "Follow up" programme was established. On the basis of this programme, the experts of the Academic Competence Centre for Teachers together with the teachers have integrated a chosen innovative study method into the study module.

Nielsen, Stovang (2015) agree that the most important feature of design thinking method is its open people-oriented attitude towards problem solving. The design thinking method helps to learn to solve difficult structured problems, i.e., real life problems which have more than one solution or way and emphasise that such problems cannot be solved at the beginning of the implementation of the design thinking method. The 'true face' of the problem can be seen in the implementation process of all stages when exploring the activity, creating solutions and concepts and so on. Even then the problem might change its shape several times. They also claim that this method is truly universal and suitable for various areas and sciences. The design thinking method consists of three essential elements: repeated process, creative

spaces and strong interdisciplinary communication. Nielsen, Stovang (2015) distinguish six stages in the design thinking method. In the first stage “discovering the present”, the focus is on deep engagement in the problem space; and the next stage “imagining the future” is focused on getting closer to searching an answer to the question ‘What can happen?’. Thereafter, in the stage “potential for the future”, the attention is on collection and evaluation of users’ responses with regard to the aspects, challenges or problems under analysis. The phase “interaction with others” involves a general decision-making process. The “go to the theory” stage emphasizes the importance of actively using theories in the decision-making process. The sixth stage “new artefact” is about the development of artificial solutions such as concepts, visualizations, prototypes, and layouts created throughout the learning process. The transition from one stage to another must be gradual and entail integration of knowledge from other areas.

Velushchak (2014) argues that learning through case study method is convenient in analysing real-life situations and problems that can later be transformed into behavioural patterns and future examples. This way of learning is useful because it allows to work with real-life professional problems, look at them objectively, and understand various circumstances and causes of their occurrence. This method is a great opportunity to exchange ideas about work-related solutions because learners do not only diagnose the causes of problems or summarise a certain situation in a given case but also often seek to solve it themselves.

When developing or selecting cases, it is essential to consider the combinations of the following elements: (1) compliance of the case with the whole module system; (2) the level of complexity of the case; (3) teachers’ knowledge in the area; (4) the level of students’ involvement; (5) the length of the case; (6) compliance of the case with other analysed cases; (7) the novelty of the case; (8) the amount of qualitative and quantitative analysis; (9) the amount of work in the classroom and at home; (10) compliance of the cases with other modules and their activities; (11) organisational details; (12) other recommendations.

Harding (2018) says that the role of the teacher in this method is more than a colleague or an assistant because it is important to listen carefully to the students and show respect for them and their comments, create a safe and attractive environment in which interesting discussions could develop. The teacher should help students to communicate, stimulate controversial discussions and summarize all the material.

## **RESEARCH RESULTS**

### **Results of The Interviews With Teachers Who Adapted Design Thinking Method**

#### **Adaptation of Design Thinking Method**

The teachers who participated in the research noted that the design-thinking method was chosen due to the possibility to convey the study material through activities: “*I used it for the development of a prototype*” (INF6); “*I want my students to learn through practice*” (INF13); “*... now students want to study and acquire knowledge not through theoretical lectures but through practice*” (INF2).

The teachers noted that the design-thinking method was a suitable option because it helped to achieve a specific goal or the results of a module: “*The module is related to aesthetics, technology search, innovative use of materials and even a new approach <...> the design thinking method itself is oriented towards innovation*” (INF2); “*We decided that they should eventually create those groups and present innovations in the context of sustainable development as well as architecture*” (INF13).

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The teachers chose this method for their modules as it was aimed at innovation (“... *the product we develop is primarily meant for customers and includes innovation as well*” (INF6); “*as the name of the module is Sustainable Architecture and Sustainability in Architecture, it is inevitably related to innovation ... with both aesthetics and technology search, and with the innovative use of materials, and even with a new approach, because sustainability itself requires a new approach*” (INF2)); promoted interdisciplinarity (“...*we agreed with the teachers from the Marketing Department that they would bring their entire prototype to the lectures and they would define the pricelists...*” (INF6)); and helped to understand the customers’ needs (“...*reveals the social dimension <...> the ability to be empathic with the social environment and understand the person is very important the architect’s profession*” (INF2); “...*complemented the first part of the project when an analysis was needed <...> students were forced to pay more attention to the needs of others*” (INF3)).

The teachers who adapted the design thinking method said they needed some time after the training to start adapting the method: “*After the training, it took some time to start adapting this method; it seemed like nothing new and special, but then you start thinking how it should be used. I needed some time, and actually it took quite a long time*”. (INF2); “... *it only took time to think this method over*” (INF3). The teachers also needed to imagine how the method could be integrated into their modules: “*I had a vision where it could be...*” (INF3); “*I was thinking how all this program could fit into my module – only occasionally or continuously through the module, how to formulate the challenge, what or which materials and resources could be needed in the module*” (INF12).

When the decision is made to adapt innovation, it is necessary to consider the purpose of the subject (module), tasks, materials, assessment, etc. It was mentioned that teachers did not change the purpose or the results of the module because of the new method. This was confirmed by their statements: “*I incorporated the method and adjusted it to meet the existing goal/objectives*” (INF2); “*First of all, you are still trying to reconcile... how much it can be adapted to the goals of the module and the competences that I should teach in this subject*” (INF3). Other teachers changed those aspects substantially as they switched from the theoretical teaching module to the practical one: “*I have already changed everything <...> because all of the independent work was interlaced with teamwork*” (INF6). When adapting the method, it is necessary to think about the competences that students should acquire during the course (“... *the next thing I ask myself in the realistic evaluation of the situation is this: What will my students be like and what indirect benefit will they get as we are not going to speak only about competencies*” (INF3).

The teachers put their insights together on how the whole process should look within a design-based thinking approach. Their main statements are as follows: “*I followed all the steps methodically. I reviewed all six steps thoroughly and considered what each of them should entail...*” (INF3); “*I planned everything. I wrote down all the steps and followed them when teaching...*” (INF6); “*We sat down and wrote everything down... and made the plan of the module <...> then we developed the tasks and decided what materials we will need. And now we are thinking about the evaluation*” (INF12). The teachers selected appropriate topics for each stage of the method and determined how and what they could achieve by this method. Later, they were able to choose and adapt the tasks and activities of the module: “*I combined all individual work which students have to do during the whole semester into one practical assignment <...> I modified it <...> students do not do surveys anymore. Now they participate in discussions <...> then they make the third step when they choose, design and make prototypes of 3D printings <...> then in the next stage, they make their final really nice prototype <...> we did not make prototypes before. We would only make some drawings of it*” (INF6); “...*this time, we emphasise the importance of the*

*social aspect <...> we planned the whole module... “ (INF2); „I used to teach in a very traditional way <...> and now my students are taking up challenges“ (INF12); „I mixed some aspects together. I added the analysis of analogue. I also asked students to make a deeper analysis of scientific literature and patents” (INF3). This shows that adoption of this method changes the nature of the activities because students become the main actors rather than being passive listeners. As it was mentioned above, this method requires a lot of preparation in the beginning. But later, it is not the teacher but the student who is more active. Teachers essentially adapt the tasks given to their students so that they are encouraged to deal with challenges, study not only in the classroom but also at home and find solutions: “...they get more complex tasks and have to prepare additionally” (INF3).*

Perhaps the most important aspect that the teachers considered most influencing in the adaptation of design thinking approach was the ability to prepare for this method: *„I prepared a challenge and then I had to prepare all the necessary materials <...> I tried to read some literature in English. It was written in a very abstract way. I am still trying to take something from it and I have to reject something as well.“ (INF6); „...I have to manage time and all activities and prepare the material.... because if we have to make a poster, we need post-it notes and markers, and if we make a collage, we need special materials again, and so on.“ (INF2); “...when teachers have to start from scratch, it really takes a lot of preparation.” (INF12). This method is based on work done in special creative spaces; therefore, it is important to prepare the spaces accordingly and collect all the necessary multiple materials for the creation of a prototype.*

The participants of the research mentioned that when they changed the tasks and activities, the assessment of the subject (module) had to be changed as well. This was confirmed by their statements: *“...I grade students based on how and how much they worked” (INF6); “The result was 60% and the process was 40%. I believe that the process can be assessed <...> I make students’ surveys before the assessment in order to see how they evaluate their group members’ final result...” (INF12); „... not only the result is important here but also the process. The process is ongoing <...> Of course, the result will be evaluated whether it is of high quality and can be used.” (INF2). It shows that integration of the design thinking method into the subject requires making changes in the assessment as well. The element that is added is an assessment of students’ process.*

In the adaptation of the design thinking method, students were not consulted and their opinion was not taken into consideration: *“... we did not really talk to students about this subject because our students are not familiar with this method very well and they are not really eager to talk about it” (INF2); “...they say that it is a lot easier for them when they do not have to think about it. It is easier for them when their teachers give them a task, explain the solution and tell how to do it.” (INF3); “I know my students’ opinion... some of them have jobs and sometimes they come to have a sleep in the classroom after work” (INF12). The responses of the research participants indicated that teachers decided on adaptation independently without prior consultation with the students.*

The participants of the research indicated that they applied the adapted method throughout the whole semester: *“I applied the method through the whole module.” (INF6); “I simply decided to do the whole cycle of design thinking: one theoretical class and the rest devoted to practice, and then repeat the same through the whole semester.” (INF2); “I have extended the method through the whole course...” (INF3). However, there were several participants who indicated that they applied the method gradually: “...I started applying it step by step. I started by giving a short task at the end of a lecture, and later I used it more and more often.” (INF12).*

## **Teacher Activities in Adaptation of Innovative Study Methods at University**

During the adaptation process, it is important to pay attention to how the teacher evaluates the process and what feedback is used. The participants mentioned that they reflected on their activities: *"...in each stage, we reflect on how we are doing..." (INF2)*; *"I am going to see how I will manage to implement all the stages... <...> I take notes to refer to in the future."* (INF6). The participants of the research also noted that they document their steps and keep their notes for the future: *"I write down students' reactions after each task. This part is really interesting to me. I make conclusions right away about what I should do next..." (INF2)*; *"I take pictures, make videos and we have Moodle system <...> we document all the stages."* (INF12). The teachers also evaluated whether the method was successful and helped to achieve the main goals and objectives of the module: *"I expect a better result in the content of the project"*. (INF3).

Teachers monitored students and recorded their reactions during each lecture. The following statements illustrate this point: *"I watch my students in order to see who is discussing and participating and who is just sitting there."* (INF6); *"We observe the students... see how they are doing"* (INF2); *"... self-assessment is enough when I keep track of how students work <...> I can tell a lot from the way they work."* (INF3). Many lecturers collected students' feedback and organized surveys: *"...at the end of the semester, we make a brief survey... or a discussion with the students about the method... We ask our students what they liked and what they did not like..." (INF2)*; *"I am planning to make a quick survey with my students..." (INF6)*; *"Students have to fill in questionnaires about all modules. <...> for me, the results from such questionnaires are sufficient"* (INF3). Thus, while the students' opinions were not consulted during the adaptation of the design thinking method, their opinions were intensively collected after testing the method.

The results of the research showed that teachers do not tend to consult their colleagues: *"I did not consult anyone. I do not know whether anybody else is applying this method at the faculty. I guess, no one is doing this at such scope as we are."* (INF2); *"As far as I know, my colleagues have not tried to use this method in our study programmes yet. I saw that someone was using certain elements of the method, but definitely not the whole method."* (INF3); *"...one teacher was using it, but she is from a different programme... the specifics of their programme is different from ours."* (INF6). An assumption can be made that teachers seldom consulted their colleagues because they did not know whether someone was using this method in a similar way in their lectures, or there were not so many colleagues applying this method in their field.

The teachers who participated in the research mentioned several features of this method that would make it easier to adapt. This can be confirmed by the following statements: *"...more universal"* (INF6); *"I think that the area of application is suitable <...> It was not suitable for every module but there were some innovative ones. Certain methods are good for certain modules and not for others."* (INF2); *"more flexible, perhaps more tested, complete..." (INF3)*. The methods that are universal for all study fields and more flexible are easier to be applied.

Adaptation also depends on the way of learning about the methods, i.e., whether the teachers found out about the method themselves or they were told to apply it. The following statements prove this: *"...If we are told to apply the method, it is not good. <...> ...it is difficult to expect good results then."* (INF2); *"...in one case, you put a lot of initial effort, and in another case, you can do everything in a careless manner"* (INF3).

## Adaptation The Case Study Method

The teachers who participated in the research mentioned that the case study method was chosen because it helped to present the material to the students through various activities: *“I do not want my module to be ‘dry’ and only theoretical. I want my students to learn things through practice.”* (INF10); *“...the word ‘practice’ is important here <...> At the very beginning, I did not see any teaching in this method. I saw that students have to do a lot of work, which was not happening at first.”* (INF1); *“...after they analysed one case which was of a little bit higher level than their regular tasks, they saw that they can do it themselves and started taking things into their own hands.”* (INF8). The conclusion can be made that teachers wanted their students to learn through practice.

The teachers noted that the case study method was used because it helped to achieve the aim and outcomes of a specific module: *“One of the objectives of the module was to work in a team and generate an idea, do research of the market and create a prototype. The most suitable method to help reach this aim was the case study method”* (INF10); *“I suspect that you have to consider it very well... <...> ...what your study module is about, what you are working with and what you have to do in order to obtain the final result by using this method.”* (INF); *“I saw that this method was most suitable for this particular module because it was really effective and practical <...> I think that the aim of the module could be achieved only by using the case study method. I simply noticed that it could be really practical.”* (INF1).

The participants pointed out that before the adaptation of the method, they first of all reconsidered and thought the method over very thoroughly (*“...I kind of ‘freeze’ it for some time... and then I can use it.”* (INF1); *“I collect information online, think everything over very well and gather examples...”* (INF10)), planned the lectures (*“I write down ideas of possible case studies in one or two sentences. That is how I select the case study that I am going to use with my students. It is a very important step because after I collect many case studies, I can mix and match them and make one case study suitable for the learning outcomes and context of the module.”* (INF8); *“...it is like a frame which... maybe not even a frame... I would probably say that it is like a skeleton on which we can put the muscles, the skin and so on.”* (INF1)) and foresaw what needed to be changed (*“... I wrote down the main elements of the case study. Then I tried to decide what we can do with this case study in the context of this module”* (INF1)).

The teachers who participated in the research noted that by adapting the method, they did not change the aim or the learning outcomes of the module. This was confirmed by the following statements: *“I neither reviewed nor changed the learning outcomes of the module but I am going to definitely do it in the future.”* (INF10); *“...it was integrated <...> ...it did not change because of this method...”* (INF5); *“...it was the thing that I added to my classes <...> it was similar to an activity given in a class <...> the aim did not change. Students simply achieved the same aim in a different way.”* (INF8). On the other hand, the participants of the research highlighted the fact that, when teachers do not change the aim or the results of the module, they have to find a suitable case that would respond to the current aim and objectives of the module. This was confirmed by the following statements: *“...I tried to select such a case which would comply with the learning outcomes of the current module <...> it means that the most important work is to find a suitable case that would comply with the topics and learning outcomes of the module. If you cannot find such a case, you have to make a case study lesson yourself. I have done this several times.”* (INF5).

The first step in the adaptation of the case study method included the planning process. This was confirmed by the following answers: *“First of all, we prepared a plan, the terms and assessment criteria of individual students’ work”* (INF10); *“...it is important to plan the process in order to avoid chaos*

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in the classroom” (INF8); “...I simply tried to plan what we can do with the case study method in the context of this module and what tasks would help to perform it. <...> first of all, we formulated the problem, then looked at the context and the situation, which is very important, and then searched for the solutions to the problem...” (INF1). Later, the teachers adapted the tasks and activities in accordance to the concept of the case study method: “...I changed the sequence of task performance based on the examples of product development that I found.” (INF10); “Classroom activities changed because students felt the responsibility to prepare for their class activities before coming to the classroom <...> students are informed about what we are going to analyse next time <...> I ask them to read at home and prepare notes regarding a specific issue under analysis...” (INF5); “I change the task and instead of explaining things myself, I give them an article and ask them to analyse it on their own.” (INF8); “We analyse a certain problem based on examples of other countries. We simply take those examples of cases. So in each class, we analyse a different case.” (INF1).

The teachers who participated in the research mentioned that, in addition to other things, the assessment of their subject (module) changed as well. They assess not only the knowledge gained by the students but also their preparation for the class: “...the assessment is also different <...> I assess not only the students’ knowledge and the final result but also the whole process and preparation. <...> ...all students have name tags on which the teacher writes down their grades or comments on how they were doing in the process of solving the case.” (INF5); “I want to modify the final report again. <...> This year, I have forbidden the traditional way of reporting not because it is unacceptable for me but because I want my students to think outside the box... I am simply making them think outside the box.” (INF1). This shows that the adaptation of the case study method into the subject requires modifications in the assessment.

The teachers’ interviews show that teachers make decisions regarding the adaptation of the method on their own, i.e. without consulting with their students first: “I make decisions about the educational process myself without consulting my students.” (INF5); “No, I do not talk about this with my students, partially because students are often afraid of hard work and reject teachers’ ideas...” (INF8); “No, I guess I do not discuss these questions with my students. I make the decision to adapt this method on my own.” (INF1).

On the other hand, the teachers indicated that they consulted with the implementers/consulters, colleagues and acquaintances about the adaptation of the method. The following statements confirmed this fact: “Yes, I have talked to people who work with the case study method and received some useful information from them. We really had many discussions... <...> with the developers of the method but not with the implementers.” (INF1); “I had a very good colleague who helped me and gave me some really good feedback during the whole process of adaptation... <...> it was a really great support. I received the whole collection of cases to choose from. I only had to review all the cases and decide which cases were good for my subject and would meet the expectations of what I want to achieve with them.” (INF5); “I consulted my colleague who had previous experience with the method <...> Teachers need comprehensive training about various teaching methods and examples of good practice. Choosing the method independently and collecting information online are not the best ways of adapting the method.” (INF10). Therefore, various supportive activities and practices such as training and sharing of experience and good practices are necessary in the adaptation process of the case study method.

The teachers who participated in the research used the adapted variation of the case study method throughout the whole semester (“We had eight meetings – eight different cases, which we applied throughout the whole semester,” (INF5); “I used it as the basis of the whole module...” (INF1)), in part of the course (“I used it in consultations and seminars when students had to present one part of their



*individual work*” (INF10); “...the application was fragmented... in some theoretical lectures... <...> as a one-time task or like a semester project...” (INF8)) and in the cyclic type of studies (“...we have the cycle type of studies. So students do not have many meetings. We had eight meetings. So we had eight different cases.” (INF5)). One of the teachers only tried out certain elements of the case study method: “I did not apply the method at a 100% capacity. It was not perfect. It was some kind of an adaptation.” (INF1).

After testing the adaptation, the whole process was evaluated. In this case, it was important to determine how the teachers evaluated the process and what feedback was used. The lecturers who participated in the research reflected on their activities (“I took note of how well we were working in the process and whether we reached the goal ... I think ... I analyse the process after each lecture” (INF1); “I noticed that I did not manage the whole process very well...” (INF8)) and took notes about their observations (“I took notes about each element... and I wrote down all my questions.” (INF5)). Several teachers mentioned that it was important for them to evaluate how the method helped to achieve the results of the module (“...it was important for me to evaluate it by giving a grade and look at the students’ success in the process... <...> If the average of the results is good and high, then they are able to fulfil the criteria of that method, and the method is suitable for the process” (INF5)). It was mentioned earlier that during the adaptation of the method, the teachers adapted it to different students’ characteristics. Therefore, the teachers had to observe the students and record their reactions during each lecture. This is illustrated by the following statements: “I noticed that students lacked independence and freedom to generate ideas.” (INF10); “... I watched my students in the classroom to see how much they were able to do... How much can they manage to do? What do they take from the case study? Are they able to discuss, analyse and so on.” (INF5); “...students’ reaction was very positive and they did well there...” (INF8); “I see that students have questions about the cases. They try to understand the essence of the problem and they even start living with it, carrying it with them all the time.” (INF1).

The results of the research showed that the teachers organised surveys about the adapted ISM variation or tried to get students’ opinion and observations in other ways: “We asked the students to express their opinions at the end of the semester.” (INF10); “Students’ responses, reflections and comments are the main criteria...” (INF5); “I distributed a questionnaire that I had designed myself. The students were really glad to fill it in. I asked them what they liked, how they felt, what they would like to study and whether they would like that all subjects were taught like that. The students wrote many comments.” (INF8); “I asked my students how they evaluated the course and whether they were interested.” (INF1).

The results of the research showed that teachers did not tend to consult with their colleagues. This was confirmed by the statements: “I did not consult with them...” (INF10); “I do not know anyone who is using the case study method. ...maybe they are... but we have not talked about it...” (INF1); “I have not actually discussed it with anyone. I think there are only a few of us who are adopting this method in engineering studies.” (INF8). On the other hand, the results revealed a case when the teachers closely consulted with their colleagues very often: “Yes, indeed. There are colleagues who know this method very well. So, we have the possibility to consult with them. Yes, <...> we have a unique situation. We have meetings for all teachers in the programme where we have the possibility to discuss everything...” (INF5). This shows that the situation is varied in respect to discussions and consultations with colleagues. An assumption can be made that teachers rarely consult their colleagues because they do not know if someone else is using the method in a similar way in their lectures.

The teachers indicated that the adaptation of the method also depended on the way of learning about the method, i.e., whether they found out about the method themselves or they were told to use it. The

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following statements prove this: “...if teachers are not interested, they will not be motivated to change. In such case, teachers might follow the guidelines projected on them from the administration, but they will not necessarily do anything good with them in their module.” (INF10); “The teacher knows and feels best what method to choose... <...> It is not about telling you what to do. When you are told what to do, you feel resistance because other people do not necessarily know the content of your module and what you are trying to teach.” (INF5); “The initiative comes from the teachers because when they are teaching, they can see if some kind of a tool is missing in order to present the material, etc.” (INF8). The responses of the teachers who participated in the research illustrated that the case study method was easiest to adapt when the need to adapt the method came from the teachers’ initiative and was not ordered to implement.

It also came to light that in the in-house trainings, the teachers were introduced to somewhat adapted ISM for a particular context: “When we get to learn about a particular method within an organisation... <...> we immediately add a lot of context to it <...> and we take the finished product with us. And without much effort, we adapt it directly to our local environment.” (INF1). In such cases, when the training takes place in other organizations, more effort and time is required to adapt it (“...if I get to know about the method somewhere else, I take the information about it as it is <...> and then I have to adapt it to this context.” (INF1). So less effort in adapting the case study method to the subject (module) is needed when the method is introduced in the internal trainings of the organization because in such cases, the presentation of the method has been adapted to the context.

## **DISCUSSION AND CONCLUDING REMARKS**

With regard to research results presented above, it may be stated that the process of ISM adaptation in practice revealed itself in more detail than it was analysed in the explored literature. The literature review emphasized that the process of ISM adaptation consisted of four stages: identification of ISM elements to adapt, adaptation of the identified elements, testing of the adapted ISM, and assessment of the adapted ISM. During the interviews, it became clear that the process could consist of more stages as, by defining the categories of ISM process adaptation, seven categories became evident: selection of ISM, collecting information about ISM, the stage of considerations (adoption), adaptation of ISM, testing of the adapted ISM, maintenance, and analysis of the adaptation process.

During the stage of adaptation, the teachers carried out different activities. Hord (2013) claims that, after identifying elements to be adapted, the modifications have to be applied. In the research, two different versions emerged: in one group of adaptation cases, the module aim and outcomes were adjusted only when ISM was being adapted; whereas, in other cases, neither the outcome nor the aim changed. In the case of PBL, the respondents noticed that neither the aim nor the outcomes of the module changed because they searched for a problem that would meet the aim and outcomes of the module. In the instances of case study and design thinking methods, it was observed that, sometimes, the outcomes were corrected when ISM was integrated into the module, and in other cases, they were not corrected. When speaking about the case study method, respondents emphasized that in the cases when neither the aim nor the outcomes were changed, it is important to choose a suitable case. Meanwhile, the respondents who talked about the design thinking method mentioned that the outcomes are supplemented by the fact that the method makes them investigate end-users and create innovations from their perspective.

Case analysis demonstrated the importance of additional components: the significance of the method's features and the significance of the method spread for ISM adaptation. According to the respondents, it is easier to adapt the methods that are widely spread as, in such cases, it is easier to find information about them and to discuss the problems and barriers of the method. Furthermore, methods may have different conceptual attitudes, they are easier to adapt because they are more universal and more suitable for a wider range of study subjects.

In summary, we could maintain that both during the literature review and the empirical research it was identified that all the three variables – innovations, teacher and student features – are key actors in the process of ISM adaptation, and they have the highest importance in the process. The empirical research added the components related with the features of innovation (in this case – ISM) and the teacher.

According to the data, four ISM adaptation variations can be formed – complete, fragmented, trial and discontinued. These variations of teacher activities include four key stages of ISM adaptation with specific activities during each stage. In the case of the complete adaptation variation, during the stage of preparation, the vision of a study subject or a module with ISM is formed and elements to be adapted are distinguished. Then, tasks and activities are adapted, and the system is changed accordingly. During fragmented adaptation, several tasks and activities are taken at once and presented to students, and the system of assessment is changed accordingly. In this case, the method does not bring about any changes in the subject or module aim and objectives. The trial of the method may be gradual or it can be implemented in a part, a stage or a step. During the trial of an adaptation variation, teachers adapt the tasks and activities they present to students without changing the system of assessment. In this case, there are no changes involved neither in the aim nor in the objectives of the subject or module. The trial of the method may be gradual, when testing is gradual and when specific stages of the method are implemented. Following the variation of interrupted adaptation, the vision of a subject or a module with ISM is formed during the stage of preparation for adaptation. ISM is incorporated, and it is visualized what lectures would look like while using this innovative study method. Then, specific elements of a lecture are distinguished, and plans are made for adaptation and adjustment.

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# Chapter 6

## Cognitive vs. Social Constructivist Learning for Research and Training on the Angoff Method

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### ABSTRACT

*This chapter aims to revitalize the use of the Angoff method in measuring students' performance in the educational contexts by offering guidance on the constructivist learning perspective that is more appropriate for training K-12 teachers. Specifically, it compares the cognitive and social constructivist theories and the Completely Structured Training (CST) and Partially Structured Training (PST) designs for conducting training on the Angoff method. The analysis argues for the relative efficacy of the cognitive constructivist perspective of the CST based on a breakdown of the cognitive strategies of the Angoff method judgments over the social constructivist perspective of the PST that emphasizes interpersonal interactions. The chapter concludes with recommendations for empirical comparisons of the quality of judgments based on the CST and PST models.*

### INTRODUCTION

This chapter aims to revitalize the use of the Angoff standard setting method in measuring students' performance in the K-12 educational contexts by offering guidance on the constructivist learning perspective that is more appropriate for training teachers. Thus, the target audiences are teacher educators and measurement professionals. The cognitive and social constructivist learning perspectives are compared as well as the CST and PST models for addressing the difficulty of the Angoff method for K-12 teachers. The analysis argues for the efficacy of the cognitive constructivist perspective of the CST based on

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a breakdown of the cognitive strategies of the Angoff method judgments over the social constructivist perspective of the PST that emphasizes interpersonal interactions. The chapter is organized into five sections. Section one lays the foundation for studying the Angoff method. Section two reviews the literature on training; section three contrasts the constructivist learning theories. Section four establishes the link between the constructivist perspectives and CST and PST models. The final section presents recommendations for future empirical comparisons of the effectiveness of the CST and PST models.

## **BACKGROUND**

The Angoff method bears the name of William Angoff who first suggested it. As originally described in the book chapter Angoff (1971), the task for measuring students' performance is to state the probability that a group of minimally competent candidates (MCCs) would answer each item on a test correctly. The MCCs refer to students who barely possess the levels of knowledge and skill competencies operationally defined by performance level descriptors (PLDs) and measured by tests. As proposed, the Angoff method is well-suited for tests comprising multiple-choice format questions. In measurement terminology, the probability judgments represent "test items difficulty." The sum of the test items difficulty for the MCCs represents the minimum test score (a.k.a, cut score) that meets the PLDs.

The Angoff method has been and remains a popular and most researched option for measuring students' performance relative to standards (Plake & Cizek, 2012). It has psychometric appeal because it presents a realistic probability formulation of test-taking events, such as correct responses by examinees (Impara & Plake, 1997). More recent appraisals suggest that the method offers the best balance between technical adequacy and practicality (e.g. Plake & Cizek, 2012; Schnabel, 2018). However, the frequency with which it is used in educational settings has waned (Plake & Cizek, 2012). In fact, the bookmark method involving instead the choice of, as opposed to the judgment of, item difficulty has displaced it for the purpose of National Assessment of Educational Progress (NAEP) (Schnabel, 2018).

A primary criticism of the method is the difficulty of the participants' task. In the 1990s, a number of studies questioned the validity due to inability of the participants, such as teachers who interact with and are familiar with the student populations to perform the task (Plake & Cizek, 2012). These studies unanimously concluded that the method has limited utility as participants struggle to make the required judgments (e.g., Impara & Plake, 1997, 1998; Shepard, Glaser, Linn, & Bohrnstedt, 1993). For instance, Impara and Plake (1997) reported that although teachers could estimate the relative difficulty of test items very well, they were unable to estimate absolute difficulty accurately. Impara and Plake (1998) found that teachers were more accurate in estimating the performance of the total group than of the MCC, but in neither case was their accuracy level high. Shepard et al.'s (1993) study with the NAEP reported similar inconsistencies in item difficulty judgments, especially for easy and difficult items. As a result, they concluded that the method was fundamentally flawed.

This criticism of the Angoff method was refuted by psychometricians with expertise and experience in standard setting, more prominently by Cizek (1993) in response to Shepard et al.'s (1993) report. However, Shepard et al.'s conclusion was instrumental to the discontinuation of the use of the Angoff method with the NAEP in 2005 (Plake & Cizek, 2012). Meanwhile, Cizek (1993) likewise most contemporary researchers attribute the difficulties participants have with executing the Angoff method to the inadequacy of their training. Thus, since the beginning of the 21<sup>st</sup> century some researchers have addressed the cognitive challenges of the participants (e.g., McGinty, 2005). Recently, Skaggs and Hein (2011)

characterized the issue as cognitive complexity, which refers to uncertainty about the use of information in the judgments. Skorupski (2012) identified the challenges as misunderstanding of MCCs and the difference between required predictive and value judgement (i.e., the difference between “the minimally competent will answer this question correctly” versus “the minimally competent should answer this question correctly”). While Skaggs and Hein (2011) examined alternative methods, Skorupski (2012) made the case for designing an appropriate training on the Angoff method to address the cognitive challenges and for professional development. Thus, this chapter addresses the appropriate framework for training K-12 teachers on the Angoff method. The following sections review the current state of training on the Angoff method, and then present the comparative analysis of the underpinning constructivist learning perspectives of the CST and PST model as well as their curriculum and pedagogy.

## **THE STATE OF TRAINING ON THE ANGOFF METHOD**

The methods of conducting training on the Angoff method for the NAEP involves the following sequential steps: sending advance material; orientation and preparation for the task; taking the NAEP test; reaching agreement on the meaning of the PLDs; instruction on the rating methodology; practice on the rating tasks; and; and iterative feedback process, at least three rounds of judgment to assure that the participants are well trained and their judgments are well-informed (Loomis, 2012).

The advance materials include information on the content assessed by the test. The orientation and preparation for the task reiterates the information with some details added on the NAEP content frameworks, the PLDs, and the standard setting methodology. The participants take a form of the NAEP for the target grade level. The administration is timed, and they are allowed the same amount of time that is provided to students. Then, they are given the rubrics to score their exams, however their scores are not evaluated. The instruction for facilitating a common agreement on the meaning of PLDs begins with the review of the NAEP policy for Basic, Proficient, or Advanced performance levels. Then, participants are asked to develop Borderline PLDs that operationalize the MCC performance after which, they are considered ready to provide judgments. Thus, the instruction on the rating methodology involves the actual practice rating items and holding discussions on the ratings. The feedback on their judgments involves discussions of a variety of information that are pertinent to the judgments after each round. For instance, the item performance information in the form of *p-value* shows the percentage of students who correctly answered a multiple choice item. The Reckase Charts informs participants about intrarater consistency – how consistently they rated individual item relative to their cut score. The interrater consistency data, also called rater location feedback indicates the location of each participant’s cut score on a line chart. The holistic feedback are data on the percentage of total possible points a student would need to answer correctly in order to perform at the cut score and actual student test booklets. The consequences data report the percentage of student scores at or above each cut score representing each performance level. Meanwhile, participants are instructed that no one type of feedback should determine their judgments, but the PLDs should remain the standard (Loomis, 2012).

While educational measurement researchers generally agree on the importance of training, there is a lack of knowledge about the appropriate framework to inform the practices. The contemporary view is that the participants’ judgments are socially constructed, so that group processes of training are useful to facilitate consensus on divergent values (Zieky, 2012). Meanwhile, Reid (1991) noted the importance of Structured Training for facilitating judgments. Accordingly, Structured Training includes instruction



and practice for assisting participants to arrive at a conceptualization of minimal competence that is realistic and in applying the conceptualization at the individual item level. Similarly, Raymond and Reid (2001) indicated the importance of providing guidance on the item difficulty judgments because of the novelty of the tasks for participants. Hence, they analyzed the required Angoff judgments as two tasks: first, identifying the MCCs, and second, estimating the item difficulties for these group of students.

However, the instruction and practice activities for K-12 teachers have focused on identifying the MCCs (e.g., Giraud, Impara, & Plake, 2005). These training practices are collectively called Partially Structured Training (henceforth called PST). Although the PST practice of asking participants to describe the performance of MCCs serves to facilitate understanding of the target students, the typical instruction to identify the MCCs asks teachers to think about a hypothetical group (e.g., Hein & Skaggs, 2010). Meanwhile, teachers are more inclined to think about actual students in their classroom (Impara & Plake, 1998). On the other hand, the instruction on judging item difficulty emphasizes feedback. Reckase (2001) identified the feedback as normative, hybrid or process. A normative feedback is consequences data. Hybrid feedback includes *p-values*. Process feedback are construct maps—for instance, the Reckase Chart that presents the probabilities of correct response to test questions for students on the item-response model, such as the Rasch (1960) model ability scale.

Research on PST suggests that feedback is limited to facilitate item difficulty judgments (e.g., Clauser, Mee, Baldwin, Margolis, & Dillon, 2009; Fitzpatrick, 1989; Mee, Clauser, & Margolis, 2013). These researchers recommend a curriculum and instruction on strategy for using information in item difficulty judgments. Thus, Mee et al. (2013) examined the impact of instructions on how to use feedback in judgments. They report less normative influence than is reported in past studies. But a gap still exists in knowledge about cognitive strategies participants can apply for providing content-based judgments. Hence, Iyioko (2013) relied extensively on the cognitive psychology literature to design a CST for K-12 teachers on content-based strategies. In a nutshell, the CST provides instruction on both the strategies for identifying MCCs and in gauging their performance on test items. The practice involves identifying the cognitive demands of test items. The cognitive demands refer to their substantive difficulties (see Haertel & Lorie, 2004; Schneider, Huff, Egan, Gaines, & Ferrara, 2013).

The thesis statement of this analysis is that the CST vs. PST perspectives are more appropriate for facilitating learning and performance of Angoff-method judgments for K-12 teachers. The analysis in this chapter makes this case by highlighting the benefits of the cognitive constructivist learning perspectives for training development while making recommendations to support future empirical evaluations of the CST and PST models.

## **THE COGNITIVE VS. SOCIAL CONSTRUCTIVIST PERSPECTIVE ON LEARNING**

Constructivist learning theories increasingly has been applied to teaching. Their origin are cognitive theories that emphasize the impact of human over environmental factors in learning. Constructivists further contend that individuals form much of what they learn or understand. Thus, the classrooms differ from cognitive classrooms in the design of curriculum, pedagogy and assessment. While the constructivist curriculum emphasizes big ideas, a cognitive approach emphasizes basic skills. The pedagogy (constructivist) is a holistic approach that seeks students' ideas and provides rich experiences, such as learning activities and interactions over the didactic approach of the cognitive perspective in which teachers provide information to students. The assessment is 'authentic' for constructivists and achieve-

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ment tests for cognitivists. An authentic assessment is interwoven with teaching in which students work in groups not individually while most achievement tests are administered for the individual and distinct from teaching (Schunk, 2012).

The schools of thought are cognitive constructivist (COC) and social constructivist (SOC). The COC perspective is credited to Jean Piaget and the SOC to Lev Vygotsky's theory. In contrast to Schunk (2012), this chapter subscribes to the position that while the SOCs reject the cognitive assumptions, the COCs endorse them. The cognitive assumptions that the SOCs question are that thinking resides in the mind, some situations foster higher-order thinking better than others, and thinking derives from knowledge and skills developed in formal instructional settings.

However, the COC adopts a more enhanced pedagogy. While Gagné's (1965) Guided Learning based on the cognitive perspective relies only on the instruction, the COC contend that formal instruction alone does not fully account for students' learning and understanding. Hence, it provides opportunities for learners to apply what they learn in real life problem solving. Hence, the COC and SOC shares the principles of designing constructivist learning environments of organizing instruction around problems of relevance to students (see Schunk, 2012). On the other hand, Table 1 contrasts the COC and SOC perspectives on factors and processes that influence learning.

*Table 1. Cognitive vs. social constructivist learning*

<b>Dimension</b>	<b>COC</b>	<b>SOC</b>
<b>Perspective</b>	Exogenous	Dialectical
<b>Knowledge</b>	Empiricism	Empiricism and Rationalism
<b>Learning Process</b>	Equilibration	Socially Mediated
<b>Mind</b>	Decoder of Information	Creator of Information
<b>Thought</b>	Decomposable & Strategic	Holistic & Imaginative
<b>Language</b>	Derived from Meaning	Derived from Symbols
<b>Motivation</b>	Goals and Authentic Task	Social

Regarding general perspective, the COC is exogenous while the SOC is dialectical constructivism. Exogenous constructivism refers to the idea that the acquisition of knowledge represents a reconstruction of the external world. This view posits a strong influence of the external world on knowledge construction, such as by experiences. Thus, it argues that knowledge is accurate to the extent that it reflects external reality. In contrast, dialectical constructivism holds that knowledge derives from interactions between persons and their environments. This SOC perspective is closely aligned with Vygotsky's theory that emphasize the influence of the social environment. Exogenous views are appropriate when the interest is in determining how accurately learners perceive the structure of knowledge within a domain while the dialectical view is useful for challenging students' thinking and for researching the effectiveness of social influences. In terms of belief about knowledge, the COC stance is empiricism, while the SOC is a combination of empiricism and rationalism. Empiricism holds that experience is the primary justification of knowledge while rationalism believes that knowledge derives from reason (Schunk, 2012).

With respect to how learning occurs, COC stresses Piaget's cognitive processes of making internal structures consistent with reality. In contrast, the SOC based on Vygotsky's situated cognition highlights

the interaction of persons and situations in the acquisition and refinement of knowledge and skills. In terms of the factors that influence learning, the COC perspective assume they are primarily cognitive. The cognitive factors include the mind and the capacity for relating new and prior knowledge of the learner. According to Piaget, these thought processes of the mind are decomposable and are instrumental for decoding meaning and creating language. In contrast, Vygotsky's SOC views learning as grounded in a set of symbols of societal and cultural origin, namely language that shapes the habits of the mind. These habits of the mind are instrumental in creating meaning and can be understood in a holistic fashion. Thus, while the COCs emphasize constituent cognitive tasks in designing learning experiences, the SOC focus on the entire problem. Meanwhile, the two perspectives acknowledge the influence of non-cognitive factors in learning, such as learner's motivation. For instance, learners who doubt their capabilities to learn or who do not see the importance of what they are learning may not properly attend to the instruction (Schunk, 2012). However, the COC learning environment emphasizes cognitive factors, such as instruction that makes explicit the goals of learning and offers choice of authentic tasks while the SOC mostly relies on interpersonal interactions to motivate learners.

An instructional method that fit well with the SOC is peer-assisted learning while that of the COC is discovery learning. In peer-assisted learning, peers serve as active agents in the learning process. It involves class discussions which are useful when the objective is to help students acquire multiple sides of a topic. Discovery learning refers to obtaining knowledge for oneself rather than simply reading or listening to teacher presentations (Bruner, 1960). A guided discovery of knowledge requires that teachers present problems to resolve and give directions on how to search for answers (Schunk, 2012). In contrast, unguided discovery provides minimal guidance and elicit students' viewpoints about how to solve a problem (Kirschner, Sweller, & Clark, 2006). Citing Kirkschner et al.'s (2006) research Schunk indicated that guided discovery produces superior learning. Thus, the CST is based on guided discovery for developing inductive problem-solving skills of K-12 teachers who may have less well developed cognitive capacities for engaging in deductive reasoning. The rest of the discussion focuses on CST and PST model to underscore the perspectives and principles of teaching and learning.

## **THE CST VS. PST MODEL**

Although inexplicit, an inference is made about the perspectives of the PST in consideration of the practices. Meanwhile, the elaboration argues for the CST model perspectives for facilitating Angoff method judgments while citing relevant work.

## **Curriculum Frameworks**

Table 2 contrasts the CST with the PST model on the multidisciplinary curriculum frameworks. Professional development on judgments should necessary draw on both descriptive and normative theories (Over, 2004). While normative theories are the product of philosophical thinking and elaborate on how people should reason, descriptive theories derive from empirical observations and indicate how ordinary people reason. Thus, the CST curriculum also draws on the cognitive perspectives on judgment, while the PST implicitly relies heavily on statistical theories.

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Table 2. CST vs. PST curriculum frameworks

Dimension	CST	PST
Standard Setting	Parameter Estimation	Value Judgment
Measurement	Realist	Operationalist
Statistics & Probability	Objective (Frequentist & Propensity)	Subjective
Cognitive Psychology	Bounded Reasoning, Ecological & Inductive Judgment	Unbounded Reasoning, Unecological & Deductive Judgment
Social Psychology	Informational Influence of Discussion	Social Comparison Influence of Discussion

### Standard Setting

Standard setting refers to approaches for measuring educational achievement in terms of two or more performance levels or cut scores, such as designating below, at, or above grade or proficiency level (Plake & Cizek, 2012). The Angoff method is a criterion-referenced and test-centered standard-setting method. Criterion-referenced methods measure students' performance relative to content domain knowledge and skills (Glaser, 1963). As the label suggests, test-centered methods require judgments about test items, as opposed to students (Jaeger, 1989).

The Angoff method is distinct from other standard setting methods in the open-ended question for eliciting judgments (Skorupski, 2012). However, at issue is the minimally guided approach to training for addressing the open-ended question with PST that allow participants to draw on multiple perspectives in responding. In contrast, the CST prescribes a model of students' test performance that participants can use for addressing the open-ended question. In essence, the CST simplifies the task for Angoff method to providing data for model testing. Put differently, the PST is a Delphi survey research method, which addresses "what could/should be (Miller, 2006)," the CST is a statistical survey research method based on parameter estimation principles that addresses the question of "what is."

Although the PST relies heavily on statistical theories, the perspective on standard setting is value judgment. Value judgment is particularly implicated by the group processes. According to Zieky (2012), the group processes serve to facilitate consensus on judgments. Conversely, the CST perspective on standard setting is parameter estimation, which aligns with the exogenous constructivist and empiricist perspectives—that knowledge is derived from the external world.

While value judgment assumes cut scores are socially constructed, parameter estimation assumes that cut scores are generated based on real experiences, so that correct values exist (Zieky, 2012). It is important to highlight that the use of value judgment for facilitating standard-setting with the PST confounds a constructivist theory of learning with the epistemology of knowledge. According to Sjøberg (2010), this misconception of constructivism is traced to Piaget's work on epistemology using psychological method to address the subjective issues. As a result, some educational researchers interpret the epistemology as equally subjective. However, it is important to adopt an objective epistemology irrespective of the research issue (Sjøberg, 2010).

The latter point underscores the position adopted in this chapter, which is that a constructivist epistemology of knowledge should necessarily be objective. Hence, it explains the choice of parameter estimation for designing CST, even though the processes draw on cognitive psychology. On the other

hand, it is paradoxical that contemporary standard setting researchers favor value judgment based on the subjective epistemology that assumes a dialectical construction but apply objective standards in evaluating judgments. Meanwhile, parameter estimation is useful for a prescriptive endeavor and to facilitate understanding of cognitive processes for training. Moreover, it is evidence-based for yielding veridical judgments. Hence, scientific research relies more on statistical methods based on the stochastic formulation of real-world events than mathematics based on the deterministic frameworks. Thus, William Angoff deemed it appropriate for research of educational measurement.

Furthermore, parameter estimation can accomplish the goals of reliability and validity of Angoff-method judgments with the appropriate training of participants. Reckase (2009) formalized the view of parameter estimation. Accordingly, standard setting should begin with establishing performance standards, followed by the development of Performance Level Descriptors (PLDs), then test design, and lastly standard translation. While performance standard constitutes educational goals, the PLDs are operational definitions of the knowledge, skills, and processes of students at specified performance levels (Egan, Schneider, & Ferrara, 2012). Thus, a test is a sample of the cognitive competencies of students a PLD encompasses. It follows that while the judgments for deriving performance standards and the PLDs are value judgments, those of standard setting methods are predictive judgments, because they prescribe measurement operations for translating PLDs into actual scores (i.e. cut scores) on a test. Hence, they are, more appropriately, Standard Translation methods. However, the label “standard setting method” stands, to be consistent with the literature.

## Measurement

Two perspectives are relevant in measuring student performance, namely operationalist and realist perspectives (Mari, 2005). PST is based on the operationalist perspective, while the CST is based on the realist perspective. Operationalism is evident in the PST practice that leaves room for the participants to come up with their own perspectives and rules for measuring students’ performance. Conversely, the realist perspective adopted for the design of the CST specifies the perspectives and rules for measuring students’ performance. It is in line with the COC perspective of learning for forming knowledge based on real experiences.

On the other hand, operationalists view quantities as determined by measurement (Steven, 1946). The perspective is very well captured by Steven’s (1946) work, which was deemed controversial for psychological measurement. It was critiqued for widening the concept of measurement that only excludes random assignment. Furthermore, it shifted the focus of measurement from numerical facts to rules for making numerical assignments and from quantitative attributes to objects and events (Suen, 1990). In contrast, realism construes quantities as properties that exist independent of measurement (Dingle, 1950). It shares the metaphysical assumption of parameter estimation that there is a true value of a quantity, which plays a fundamental role in measurement science.

The conclusion was reached that the realist perspective is apt for the prescriptive field of educational measurement for the goals of reliability and validity of judgments. Accordingly, science is the study of the real world independent of the observer whose experiments and observations are simply means of discovering something about the world. Thus, realists explicate a theoretical and observational dichotomy in research. In standard-setting contexts, the theoretical realm constitutes the students’ knowledge, skill, and performance constructs, while item difficulties, student abilities, and test cut scores represent the observational realm.

## Statistics

The schools of thought on probability, which is the quantity for measurement with the Angoff method, are subjective and objective (Popper, 1959). The PST draws on the subjective interpretation of probability, while CST is based on the objective view. The inference that PST design is based on the subjective interpretation of probability follows from the iterative rounds of feedback that allows participants to revise their judgments based on new information. Conversely, the CST based on the objective constructivist interpretation assumes that probability judgments are generated based on actual experiences of an individual of real-world events.

Hays (1994) defined subjective probability as the degree of individual belief about the chance of occurrence of an event. In contrast, the objective view of probability is the chance of the occurrence of events verifiable in large-scale experiments and when conditions are kept constant. Accordingly, critics are of the view that subjective probability is unreliable. It varies from individual to individual, even for the same event (Hays, 1994). Thus, the CST relies on objective probability judgments, which is apt for experimental contexts where the conditions that generate events are well-defined and reproducible. In K-12 contexts, the well-defined and reproducible experiments are considered as the repeated testing of students' academic abilities or achievements. Hence, the prescriptive field of educational measurement should aspire to elicit objective judgments from teachers who rely on their classroom experiences.

## Cognitive Psychology

The perspectives on the thinking processes that may be involved in rendering judgments are unbounded and bounded rationality (Simon, 1957). While PST is based on an unbounded rationality, CST design draws on bounded rationality. The inference that the PST is based on unbounded rationality follows from Reid's (1991) proposal that suggest training on the Angoff method should sensitize participants on all factors that influence the difficulty of test items. Also, it is evident in the feedback practice of providing an array of information to participants.

While unbounded rationality assumes the limitless capacity of the human mind to process information, bounded rationality considers constraint on human reasoning by the environment and the mind (Gigerenzer, Todd, & ABC group, 1999). The assumption of the limitless capacity of participants to process information in designing PST may partly explain the reported difficulty of the Angoff method. In contrast, the CST assumes limitation in information processing are a deterrent to the appropriate application of the Angoff method. This CST assumption draws on research of judgment heuristics.

Heuristics are intuitive judgment strategies that ignore part of the information (Gigerenzer & Gaissmaier, 2011). The dominant judgment heuristics are representativeness, availability, and adjustment from an anchor (see Tversky & Kahneman, 1974). The representativeness heuristic involves feature-matching similarity judgments. Feature matching entails the comparison of common and distinctive characteristics of an object to concepts, defining categories by which they are classified into a category for which they share the most features (Tversky, 1977). The availability heuristic judgment involves the recall of what easily comes to mind (Tversky & Kahneman, 1973). The adjustment from an anchor entails reliance on an initial piece of data in judgment.

The representativeness, availability, and adjustment from an anchor heuristic have been validated in many contexts. Tversky and Kahneman provide a summary of the research. Although the evidence indicates heuristics are responsible for the biases in judgments, the fast and frugal heuristic perspective

of Gigerenzer et al. (1999) suggests that they can yield judgments comparable to statistical estimates. The conclusions generated by this research paradigm indicates that heuristic judgments based on natural sampling frequencies are capable of being more accurate than estimates from statistical models, but for biased sampling strategies. Despite their simplicity and use of relatively little information, heuristics can be quite useful for making rapid and effective judgments. Hence, the fast and frugal heuristic advocates for building prescriptive models that account for other sources of errors in judgments. Meanwhile, Kahneman (2011) made the distinction of the System 1 and System 2 modes of heuristic thinking. System 1 thinking is a fast, instinctive, and emotional mode of thinking. System 2 is a slow, deliberate, and logical mode of thinking, which can follow rules, compare objects on several attributes, and make deliberate checking and searching of memory for all possible relevant facts in judgment. Accordingly, System 1 thinking accounts for the biases in heuristic judgments.

Furthermore, these judgment heuristics have been characterized as ecological because they are descriptive of how judgments are made in practice (Brunswik, 1955). They involve inductive reasoning. Thus, the design of PST that emphasizes deductive reasoning in judgments while applying the inductive approach to research constitutes a reversal of roles of educational practitioners and researchers, as researchers are better prepared to engage in deductive and practitioners for inductive judgments. Thus, Iyioke (2013) built a model of the Angoff-method judgments for conducting CST for practitioners based on the representativeness, availability, and System 2 inductive reasoning principles while applying the deductive approach to research to match education with practice roles. The model only draws on the representativeness and availability heuristics because the adjustment from an anchor is relevant when a reference value is available. Rather than give them values, the CST serves to help teachers rely on their classroom experiences in making deliberative judgments.

Going beyond the representativeness and the availability heuristics labels, Iyioke (2013) identifies categorization and recall as memory strategies. These fundamental cognitive strategies for facilitating independent information processing are in line with the COC perspective of the CST. Categorization involves retrieving and using concepts stored in semantic long-term memory in grouping objects. Recall involves retrieving experiential information from episodic long-term memory. While the multi-store model also identifies the working and sensory memories, they are temporary storages (Atkinson & Shiffrin, 1968; Baddeley & Hitch, 1974). Conversely, the long-term memory is the permanent storage for information. Thus, the aim of educational enterprises is to facilitate the storage of information in the long-term memories.

Episodic and semantic memory are the dominant long-term storage systems. They differ in the types of information they contain and the process for storing them. The episodic memory is the archive of life events, while the semantic memory is the archive of content domain knowledge (Tulving, 1972). Semantic memory requires elaborative rehearsal to store information, while episodic memory is acquired by maintenance rehearsal. Elaborative rehearsal constitutes deeper levels of processing of information by attention to meaning. Maintenance rehearsal involves shallow processing of information, such as a simple repetition ( Craik & Lockhart, 1972; Morris, Bransford, & Franks, 1977). An equivalent label for elaborative rehearsal is deliberate practice, while the equivalent for maintenance rehearsal is rote memorization. Evidence suggests the deliberative practice of learning facilitates expert problem solving and distinguishes experts from novices in any field of study (Ericsson & Charness, 1994).

Thus, the CST aims to facilitate deliberative practices of storing and retrieving students' performance information from the semantic and episodic memories. The mechanisms are mitigating cognitive load and cognitive complexity, which are barriers to learning due to the working and long-term memory,

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respectively. While cognitive complexity refers to difficulties with storing and retrieving knowledge from the semantic memory, cognitive load refers to limitations in processing incoming information in the working memory. Specifically, the processing capacity of working memory for novel information normally ranges from five to seven bits (Miller, 1956). Thus, the pre-requisites of the CST for facilitating the learning of how to use content domain knowledge in judgments are a sound working memory capacity and episodic memories of students' performance events.

### **Social Psychology**

The dominant perspectives on the influence of interactions on judgments are social comparison and informational. Social comparison posits that discussion allows for interpersonal processes in which group members compare their opinion to those held by others in order to ascertain their accuracy. Informational influence posits that group discussion generates thinking and arguments that facilitate cognitive learning (Festinger, 1954).

Both the CST and PST allows for interpersonal interactions between participants on their judgments. However, Fitzpatrick's (1989) review of research in social psychology likewise contemporary standard setting researchers (e.g., Clauser et al., 2009; Mee et al., 2013) suggested the biasing effects of feedback discussions on Angoff method judgments. For instance, they reported the phenomena of polarization, which is the shift in judgment to a more extreme position following discussion. It has been explained as due to social comparison effects of feedback discussions. Thus, the design of the CST is based on the conviction that while interpersonal interactions between participants is useful for concept formation, it results in biased judgments. Meanwhile, the PST design continues to emphasize discussions on judgments. In contrast, the CST de-emphasizes interactions on actual judgments, but applies the perspective of informational influence in designing training discussions to facilitate the understanding of content domain knowledge and cognitive processes for using them in judgments.

### **Pedagogy**

The structured training pedagogy involves direct instruction on cognitive strategy. Direct instruction includes practice and feedback on content knowledge (Dole, Nokes, & Drita, 2009). The general argument in favor of the direct instruction is that it accounts for the information processing limitations of the human memory (Kirschner et al., 2006). For instance, there is ample evidence that lends support to the importance of direct instruction for reducing cognitive load for novice learners (Sweller, 1988). Dole et al. (2009) also indicate the importance of direct instruction to improve learning of cognitive strategies. A cognitive strategy is a mental procedure for accomplishing a cognitive goal, such as judgment. Table 3 contrasts the CST and PST on the elements of the pedagogy—how to teach.

*Table 3. CST vs. PST Pedagogy*

<b>Dimension</b>	<b>CST</b>	<b>PST</b>
<b>Curriculum</b>	Concepts & Full Cognitive Strategy	Concepts & Part Cognitive Strategy
<b>Instruction</b>	Direct	Partly direct
<b>Practice</b>	Structured & Closed-ended	Unstructured & Open-ended
<b>Feedback</b>	Process	Normative, Hybrid, & Process



## Curriculum

The PST present concepts and partly cognitive strategies for their integration, while the CST prescribes a model of concepts and fully cognitive strategies for their integration into judgments. The CST instruction on cognitive strategies of judgment serves to address the complexity of the Angoff method by a purposeful constraint on the demands on the semantic memory. The constraint is on the features of students and items to consider in their categorization to the knowledge and skills they assess and the recall of real experiences (see Impara & Plake, 1998). Thus, the CST reviews student assessment framework as mnemonic information. Mnemonics aid original information in becoming associated with something more accessible or meaningful—which, in turn, provides better retention of the information. Also, assessment frameworks are useful for organizing classroom teachers' experiences and for helping them to understand the relevant student performance events for the Angoff-method judgments. Moreover, this CST methodology drawing on COC perspective serves to improve the veridicality of judgments.

The concepts for training are students' assessment and performance constructs. The performance constructs are PLDs and MCCs. While the PST emphasizes the content, the CST gives equal attention to the content and cognitive processes that test items assess. Meanwhile, the choice of the constructs to train depends on the framework of the students' achievement standards. For instance, in Iyioke (2013) the constructs draw on the State of Michigan Curriculum Framework (MCF), Webb's Depth of Knowledge (DOK) levels (Webb, 2007), and the Proficient Performance Level Descriptor (PLD) developed in 2005 by the Michigan Department of Education (MDE). The Proficient PLD was used along with the corresponding Michigan Educational Assessment Program's (MEAP's) fourth-grade mathematics tests as reference for providing judgments. The MCF comprises three hierarchical levels of grouping curriculum concepts, namely content strands, domains, and grade-level expectations. Webb's DOK consists of four levels of cognitive skills, which are: recall, skills and concepts, strategic thinking, and extended thinking. Recall involves the ability to remember what was learned. While skills and concepts are a basic application of knowledge, strategic and extended thinking are advanced forms of application of knowledge that engage critical and creative thinking processes.

## Instruction

While the PST instruction is partly direct, the CST instruction is fully direct in terms of providing information and guidance on cognitive strategy. For a PST curriculum, the cognitive strategy is imagination for identifying MCCs and for judging item difficulty. It involves the integration of content domain relevant and irrelevant constructs. Based on Reid's (1991) assertion that items are imperfect measures of the content they are intended to measure, the PST leaves room for consideration of factors outside of those that informed the assessment design. Conversely, the CST gives full weight to assessment constructs. The cognitive strategies are categorization and recall for identifying MCCs and estimating item difficulties. This emphasis of cognitive factors and strategies in CST further accentuates the COC perspective. Meanwhile, the CST strategy for categorization accounts for common rather than distinctive features for similarity judgments (Tversky, 1977). It constrains the features of the students and items the participants are to consider in judgments to their knowledge, skill, and ability (KSA) constructs. From an educational measurement perspective, it involves criterion-referenced judgments, namely sorting and ordering students based on their KSAs, and test items based on KSAs needed to answer them. Thus, the efficacy depends on the appropriate design of the test items. Perie (2008) likewise Egan et al. (2012)

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suggests the importance of the design of test items to align with the PLD. In addition, the design of test items should control for construct irrelevant factors, namely non-cognitive factors and using PLDs that clearly define students' KSAs. The recall strategy draws on research on human memory, which suggests the superiority of reproductive compared to selective recall or imagination (see Tversky & Kahneman, 1973 for the availability heuristic and Schacter & Addis, 2007 for imagination).

The judgment process occurs in two steps: first, a PLD is conceptualized, then the PLD is translated into a cut score. Regarding the specific steps for judgment, the PST requires participants to identify a hypothetical group of MCCs and then imagine the interaction of the students with test items in judging item difficulties for them. In contrast, the first step in CST requires teachers to identify their students who are MCC. The second step requires teachers to identify KSAs test items assess and to recall previously used items in their classrooms that assess the same KSAs, and then provide judgments by counting the correct responses among the students identified in Step One. Although evidence from the research by Impara and Plake (1998) suggests that teachers are more inclined to consider specific students, the CST requires participants to think about a group of students because it matches with the second component task of the Angoff method, which is judging the proportion of the students who would respond correctly to items. Moreover, it may be simpler to recall testing situations involving a group of students than to recall those involving a single student. Nevertheless, the sample sizes of students and test items to recall are left open to account for differences in participants' experiences with the target student populations. Furthermore, how to combine discrepant judgments of difficulty of items that assess the same knowledge and skills from multiple testing situations involving the same group of students is unspecified because of the perceived limit at which task explication might become counterproductive to simplifying the process.

### **Practice**

The PST practice is characterized as unstructured and open-ended because it does not break up the cognitive tasks involved in the Angoff method. Conversely, the CST practice is structured and close-ended because it breaks up the cognitive tasks as categorization and recall.

The classification of educational practice in terms of structure is informed by Jonassen's (1997) work that distinguishes well-structured and ill-structured problems. Accordingly, well-structured problems are constrained to engage a limited number of concepts, rules, and principles. Conversely, ill-structured problems are unconstrained, so they can engage multiple concepts, rules, and principles for solution. The more popular concepts to indicate the level of structure of educational problems are closed-ended and open-ended. Closed-ended problems involve the application of a fixed set of skills, while open-ended problems engage variable skills. The CST employs structured and closed-ended problems to facilitate teachers' learning and transfer of judgment to their classroom practices. The elaborative processing principles of memory suggest the match of training with real-world practices would facilitate a better transfer of learning (see Craik & Lockhart, 1972; Morris et al. 1977).

### **Feedback**

The typical PST feedback is hybrid, while that of the CST is process. Adding to Reckase (2001) process feedback framework for enhancing judgments, the CST feedback is an intermediate outcome, as opposed to the final outcomes of process feedback because it provides information on the subtasks of judgment—namely, categorization and recall.

Meanwhile, the CST adopts the more general notion for the Reckase's Chart, which is a construct map. Construct map feedback identifies the factors that underlie item responses (Wyse, 2013). Rather than emphasize empirical data, in the CST, the construct map feedback includes the KSAs items assess as well as the item response probabilities of students with specified competencies.

## Procedures

The CST and PST activities are compared in sequential order as follows.

1. **Instruction on student assessment constructs:** The PST focuses on the domain content, while the CST instruction emphasizes both the content and cognitive processes the test items assess.
2. **Practice on student assessment constructs:** While the PST requires the participants to take the test, the CST practice involves categorizing and rank ordering items based on the knowledge and skills they assess.
3. **Instruction and practice on student performance constructs:** The PST reviews PLDs and asks the participants to discuss and elaborate on them by defining Borderline Performance Level Descriptors (BLPDS). Notably, this PST activity assumes PLDs describe KSAs that represent average performance, while the BLPDs represent those for minimum performance (Skorupski, 2012). In contrast, the CST asks the participants to theme-analyze the knowledge and skill attributes of the PLDs and to discuss the observed response profiles of their students on test items that assess them. The idea of theme-analyzing PLDs is synonymous with categorizing items, following from the feature-matching theory (Tversky, 1977). While categorizing items serve to foster the understanding of test items, theme-analyzing PLDs is meant to foster the understanding of the target students. This CST activity assumes that all the students classified under a PLD possess the same KSAs, but their observed or estimated ability from item responses may differ due to measurement errors, such as insufficient motivation and engagement of judges or students.
4. **Instruction on the judgment strategy:** The typical instruction for the PST participants asks them to think about a hypothetical group of students and imagine their interaction with test items in judging the item difficulties. This instruction deemphasizes recall and leaves the cognitive processes for judging item difficulties open. Conversely, the CST instruction asks the participants to think about real students, categorize items by assessment constructs, and recall and use students' test performance information for providing judgments.
5. **Practice judging items' difficulties:** The PST provides practice only on judging items' difficulties. In contrast, the CST includes practice on recall and recognition of the similarities and differences in the KSAs test items assess. The test for practice judging item difficulties is different from that for categorizing and rank ordering items. Additionally, the tests for assessing recall and recognition are matched in content and may include common items.
6. **Iterative feedback:** The PST feedback includes impact data on how many students would be expected to fail based on the cut scores, whole-group and table-group discussions on the participants' item difficulty and cut-score judgments, or Reckase's Chart Feedback. In contrast, the CST feedback on assessment constructs is a group discussion on categorization and rank ordering of items by content experts. The feedback on the conception of MCCs is a construct map of student response profiles on test items that assess PLDs. The map delineates the knowledge and skill constructs that items assess and response probabilities at different student ability levels. The Rasch model is

a useful measurement model for obtaining the item difficulty estimates because it is the closest to the judgment strategy. Participants can use the construct map as a reference to adjust judgments based on the substantive considerations.

7. **Evaluate training:** The evaluation of PST focuses on outcomes of training, while the CST is based on McGinty's input, process, and output/outcome logic model. The output of training is learning. The argument is that the CST vs. PST would yield an increase in K-12 teachers' knowledge of students' assessment and performance constructs and in deliberative skills of categorization and recall. The outcomes of training are reliability and validity of judgments. Reliability refers to consistency, and validity refers to the representation of the knowledge, skills, and performance constructs being assessed. The CST increases the reliability of judgments through the strategy for categorization that could potentially reduce within item category and between participants' judgment variance. It increases the validity of judgments through the focus on knowledge and skill constructs that test items assess and on memory of real experiences and instances of students, items, and testing episodes. Additionally, the CST increases the reliability and validity of judgments via the use of intermediate outcome process feedback that reinforces judgment strategies. A review of needs for future research of Angoff-method training follows.

## **EMPIRICAL RESEARCH NEEDS**

This chapter makes the case for the re-introduction of the Angoff method in educational context and for professional development. There is a need for a shift of focus of the research on the method to evaluations of the efficacy of the frameworks and models for conducting training intervention. Research questions should in turn shift to the appropriate framework and model of training interventions for specific participant populations and under specified conditions to facilitate the use of method. Thus, the research methodology should be deductive (i.e., theory and model driven).

Iyioko (2013) conducted an initial empirical evaluation of the effectiveness of CST vs. PST. The specific purpose of this pilot study was to evaluate the effectiveness of the CST and PST with feedback for facilitating the use of assessment constructs in judgment for K-12 teachers. However, the empirical study was small scale and it served as groundwork. Thus, there is need for further research on the generalizability of the effects of the CST vs. the PST model.

The methodology for these future evaluation studies should be mixed using both qualitative and quantitative information and McGinty's (2005) input, process, output, and outcome logic model. The inputs of training are participants' background characteristics. The processes are the pedagogical practices. The output is learning, and the outcomes are reliability and validity of judgments. The evaluation should rely on Kirkpatrick's (1994) framework, which includes reaction or satisfaction and transfer of learning to judgment performance.

One unaddressed question of interest in Iyioko's (2013) study was the effects of the CST vs. PST on the use of the individual feedback types. Experimental and quasi-experimental studies with more sophisticated designs are useful to investigate this issue. These future studies should use assessment designed with the prevailing college and career readiness standards to improve the judgment of students' performances. Also, they can investigate other frameworks of the complexity of test items than the Webb's DOK because a previous evaluation suggests the DOK is not a strong predictor of item difficulty (see Schneider et al., 2013). Furthermore, there is a need to explore the cognitive processes

of PST participants on the existing databases and using nonparametric statistics to examine the data structure. This descriptive line of inquiry would be useful to further aid in training design (see McGinty, 2005). For instance, Iyioko (2013) used Kruskal's multidimensional scaling to explore categorization processes in judgments. Kruskal's NMDS computes a lower dimensional space and uses scree plots of stress values to explore the dimensionality of the judgments (Kruskal & Wish, 1978). Stress indicates the extent to which judgments can recover the dimensionality of assessment constructs. Scatterplots of Kruskal's NMDS dimensions investigate skill in categorization and whether the clustering of items recover assumptions about the nature and relationships between the knowledge and skills constructs they assess. An additional question that could be addressed by multidimensional scaling include whether judgments conform to expectations about student ability population(s) in accord with PLDs. Cluster analysis procedures are equally useful for exploring the use of categorization and addressing structural issues in data and for validating assessment frameworks. Other cognitive processes for investigation are the recall vs. imaginative modes of thinking and retrieving information from episodic memory (see Kahneman, 2011; Schacter & Addis, 2007). Nonparametric statistical methods, such as the Mantel test and bootstrap resampling are useful for studying episodic memory processes. Finally, it is useful to investigate the generalizability of the effects of CST vs. PST on professional licensure and certification contexts and for other standard-setting methods to inform classroom practices.

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## **KEY TERMS AND DEFINITIONS**

**Angoff Method:** A survey research method for measuring students' performance with reference to a framework of knowledge and skill competencies in a subject matter domain.

## ***Cognitive vs. Social Constructivist Learning for Research and Training on the Angoff Method***

**Cognitive Constructivism:** A perspective of learning that emphasizes formal instruction by the teacher and problems that facilitates deliberate information processing.

**Completely Structured Training:** A type of training that provides full instruction, practice, and feedback on strategies for using concepts in problem solving.

**Dialectical Constructivism:** A constructivist perspective that assumes learning occurs as a result of an individual engaging in interactions within a social context.

**Exogenous Constructivism:** A constructivist perspective that assumes learning occurs as a result of an individual engaging in cognitive processes that relates their prior knowledge to experiences.

**Partially Structured Training:** A type of training that provides instruction, practice, and feedback on some, but not all strategies required for using concepts in performing a task.

**Social Constructivism:** A perspective of learning that emphasizes social cognition or learning through interaction with peers.

## **KEY ACRONYMS**

**BLPDS:** Borderline Performance Level Descriptors

**CST:** Completely Structured Training

**PLD:** Performance Level Descriptors

**PST:** Partially Structured Training

**KSA:** Knowledge, Skills, and Abilities

**MCC:** Minimally Competent Candidates

**SOC:** Social Constructivism

**COC:** Cognitive Constructivism

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## Chapter 7

# Studying Medical Records Management in the Public Healthcare Sector of South Africa Using Multi-Method

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### **ABSTRACT**

*This chapter reflects on the lesson learnt from the application of multi-methods in a quantitative study that was conducted to study patient record management in the public healthcare sector. In this study, a questionnaire was the main data collection tool, which was supported by interviews, observations, and document/system analysis data. In conducting the study, triangulation of multi-methods data was performed at different stages of the study. Currently there is no clear framework in social science research about the application of multi-method, mono-method, and mixed method research, which the study intends to clear. The study revealed that quantitative data need to be augmented with some narrative/qualitative data to make an empirical conclusion and recommendations because alone, it may not be completely reliable. Triangulation of multi-methods eliminates bias and closes some gaps where data leave some questions unanswered. The study provides a framework to guide on research method based on methods ingredients.*

### **INTRODUCTION AND BACKGROUND**

This chapter focuses on the research methodology applied in conducting the study because “knowledge that is produced in any scientific field primarily depends on the methodology that is used” (Ngulube, 2015). Multi-method research played an incredible role in the study to ensure that everything is clear, understandable, makes sense, and is seen as valid and empirical. The study was more quantitative-focused.

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However, it was supported by multi-methods to make more sense, hence, most of the research elements from paradigm to analysis were more related to the quantitative method.

The worldviews or paradigm applied by the researcher in this study was a positivist paradigm. The positivist paradigm informed the application of the quantitative approach in this study. This is because its focus is on the measurements of respondents' attitudes and feedback or results, which are based on the objectives and problem statement. Generally, the focus was on assessing causes and effects to eventually recommend solutions (Babbie & Mouton, 2001; Creswell, 2009). The main research approach used in this study was the quantitative approach, which was supported with the triangulation of a limited scope of qualitative data-collection methods to close certain gaps or answer certain questions. This equates to be a multi-method quantitative research study.

Many researchers see the multi-method from different perspectives, define and apply it in many various ways. Some researchers do not see the differences between multi-methods and mixed-methods, particularly when it pertains to the definition and abbreviation. In some instances, they use the concepts interchangeably as if they are synonymous. Some also use the concepts multimethod or multi-method and not multi-methods. For instance, Guetterman, Fetter and Creswell (2015) used what they call the qualitative multimethod. This method uses interviews, observation and audio-recordings to collect and analyse more qualitative data in conjunction with limited quantitative data to support the interpretation of the findings by analysing patterns and characteristics. Mingers and Brocklesby (1997) also talk about several applications such as, multimethodology (more than one methodology is applied), and multiparadigm (more than one paradigm is applied). There are various methods that may be utilised or combined in social scientific research; however, these depend on how the researcher combines, deploys, and implements them in relation to one another (Hunter & Brewer, 2015). According to Hunter and Brewer (2015), multi-method research is the kind of study where the researcher utilises more than one method or style, that are not the same, to conduct the same study. This is not like mixed-methods research, where the researcher combines a variety of relevant methodologies.

*If we are to understand the nature and potential of multi-method research, we must first pose fundamental questions about the interrelationships among methods, data, and research problems... Only once we have achieved a better understanding of the philosophical grounding of research strategies will the opportunities afforded by multi-method research be fully realised. Multi-method research design may be appropriate to some research projects but not to others, with appropriateness being judged in relation to the nature of the research question and the sources of information we have at our disposal to answer that question. Whether or not we should use multi-methods would thus be determined by the data sources already identified and the research questions already formulated (Graham, 2010, p. 76).*

Many researchers find it difficult to differentiate between the multi-method and mixed-methods research. The difference for Hunter and Brewer (2015) is that multi-method research occurs when the researcher combines different kinds of methods in their study, regardless of whether they are quantitative or qualitative. They further state that mixed-methods research only occurs when the researcher combines qualitative and quantitative methods in their particular study and not in any other manner. They consider mixed-method research as a subset of multi-method research (Hunter and Brewer 2015). Meetoo and Temple (2003) also refer to multi-method as "complementary methods". It uses a wide range of possible sources to support statements in the research in cases where the different methods are

triangulated to enhance validity in the study. Meetoo and Temple (2003), and Graham (2010) also refer to multi-method as “multiple method” research. It helps the researcher to gain confidence regarding the data from the audience, respondents or participants (McKendrick, 1999). It is further stated that qualitative and quantitative methods may be used for cross-validation against each other on common grounds (Meetoo & Temple, 2003), and breaks the divide among different methods (especially the qualitative or quantitative methods divide) (Meetoo & Temple, 2003; Graham, 2010). McKendrick (1999) also refers to multi-method research as a multiplicity of methods that enables the researcher to explore issues. Schneider and Rohlffing (2013) also substantiate that multi-method research assists the researcher in comparing and validating results. This enhances confidence regarding the research results by showing, what they call, “multiple truth”. For McKendrick (1999), multi-method research is necessary to enhance the way research has recently been conducted. However, the understanding of the concept and the way it is supposed to be applied, needs to be adjusted. Graham (2010) states that “if we are to engage fruitfully in multi-method research then we must at least be aware of the range of possible methods and how we might combine them”.

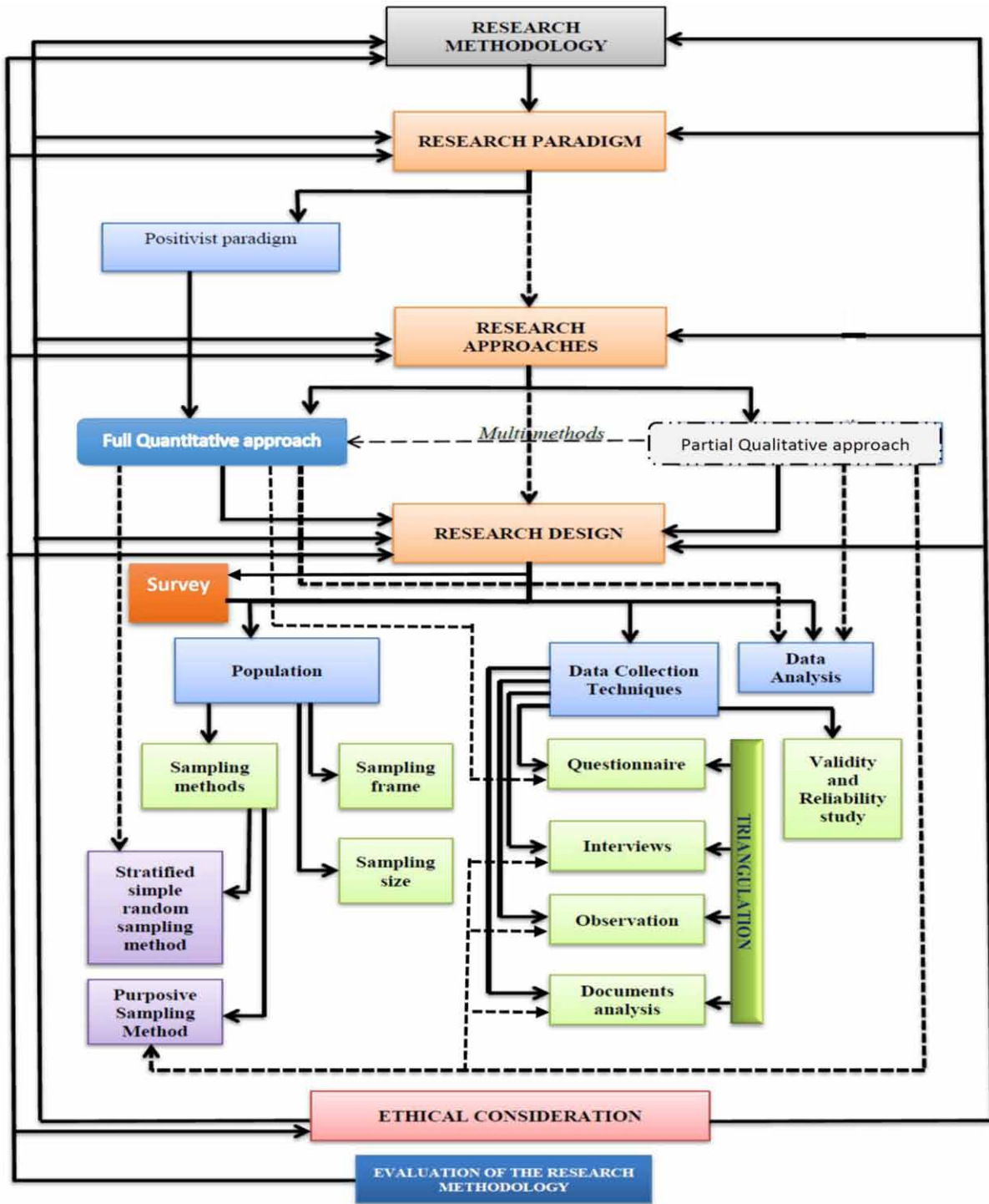
The multi-method is utilised to ensure that the research methods address the question regarding empirical data, data relation to theories, bias in methodology, cause and effects relationships, generalisation of findings, and realism versus simplification. This may only be thoroughly addressed using multi-method research (Hunter & Brewer, 2015). “Indeed, before such questions are fully explored, debates concerning best practise in multimethod research seem premature.” (Graham, 2010). Multi-method research may be designed on a micro-level where more than one specific know technique is combined for both data collection and analysis, while the macro-level of multi-method research design emanates from the discovery and application of new innovative techniques for data collection and analysis (Hunter & Brewer, 2015).

Hunter and Brewer (2015), Graham (2010), and McKendrick (1999) recognise that multi-method research is plausible because it recognises that all methods have significant strengths and critical weaknesses. Thus, integrating them leads to the upliftment in strengths and lowers weaknesses in the study. This results in empirically reliable results or findings.

*Social reality is multi-faceted and perspective is all-important. Using different methods may allow a researcher to investigate the different ways that accounts are built up. Different methods may be used to verify each other, but they may also be complementary and contradictory. Complementarity does not imply that findings have to be identical (Meetoo & Temple, 2003).*

Nevertheless, in the study, the research design and survey research emanated from the quantitative approach as fully applied by the researcher. There were four techniques that were used to collect data, namely: a questionnaire, interviews, observation and document analysis. The questionnaire was mostly used to collect quantitative data. Interviews, observation and document analysis were used to collect qualitative data that were to be used for clarifying questions in quantitative data gaps. Hence, the qualitative data was used to understand the quantitative data during analysis and interpretation. The data was also triangulated after collection to support the main technique, which was a questionnaire for the quantitative method. This was to ensure that gaps were closed or minimised to a reasonable or acceptable level. All the collection tools were tested and reviewed for validity and reliability. This kind of approach is considered by the researcher as a multi-methods research approach. Figure 1 illustrates the map of the research methodology for the study under discussion in this Chapter.

Figure 1. Mapping the research methodology applied to the multi-method quantitative study



Moreover, the study was conducted under the ethical consideration of the university research ethical guidelines. The university issued an ethical clearance certificate, clearing the study. The researcher requested permission to conduct the study in the healthcare department and permission was granted. Therefore, ethical implications were observed throughout the implementation of the research methodology. Finally, the researcher evaluated challenges and barriers that related to conducting the research methodology, which also included the application of the research paradigms, approaches, design and methods. Barrier included but were not limited to: access to the population, applying certain data collection techniques, meeting certain research needs (such as participants' interests and permission required by the organisation of the study), and remedial action to deal with the barriers and challenges.

## **RESEARCH PROBLEM**

The problem that led to the writing of this chapter was that the author has learnt that social science researchers are still experiencing a lot of challenges when it comes to the application and naming of the research methods. For instance, in some studies researcher see mixed methods and multi-methods as similar things while other see them as different but describe them same way and in some instances contradictory to each other. Some researchers claim to be using single research method and when one check the application appears to be either mixed or multi-methods. It is also not clear whether by method one is referring to the data collection tool like questionnaire or interview or is simply the nature of questions covered by the tool or the nature of data to be collected. Again, how data is analysed also count to the issue of converting it to qualitative or quantitative. Hence, this study sought to share the lesson learnt in the study to which multi-method were applied.

## **PURPOSE AND OBJECTIVES OF THE STUDY**

The purpose of this study was to share lesson learnt from the application of multi-methods in a quantitative approach to study medical records management in the public healthcare sector. The objectives of the study are as follows:

- To identify proper application of research methods in the social science research based on the lesson learnt
- To clearly give explanations of existing methods applied in scientific research based on the lesson learnt
- To provide a framework for all existing research methods applicable in the social science research based on the lesson learnt

## **RESEARCH METHODS**

It is vital for the researcher to apply appropriate research methods to give effect to conceptualisation of the research problem and prescription to the phenomenon being investigated (Ngulube, 2015). Research methods are described by Creswell (2014) as the process under which the researcher proposes the mode

of “data collection, analysis and interpretation” for their studies. Research methods pertain to the data collection tools utilised by the researcher to conduct the research study. Data collection methods entail procedures, techniques and tools applied in collecting the desired data from the participants, as sampled. The most popular and utilised data collection methods are qualitative and quantitative methods. Regarding the quantitative method, data is collected using statistical and mathematical techniques (Creswell, 2009; Ngulube, 2005a; Ngulube, 2015), because it is done by counting and scaling (Punch, 2006). Regarding the qualitative method, participants or small groups of a population are studied thoroughly and intensely (Ngulube, 2005a) by asking them questions using interviews or questionnaires, and watching them using observation, or a combination of some of the three activities (Punch, 2006). This study used a methodological triangulation in which both qualitative and quantitative data collection techniques were applied in collecting data (Cameron, 2009; Odera-Kwach, 2011). Triangulation was also used to integrate multi-methods in an attempt to minimise biases and limitations to the study weaknesses (Fidel, 2008). Data was collected using questionnaires, interviews, document analysis (e.g. policies and procedures) and observation of the state of record management and record management systems (Mouton, 2002; Ngulube, 2015), to accomplish empirical and epistemological outcomes, by ensuring that these techniques close each other’s weaknesses from their disadvantages by their diverse advantages (Mouton, 2002).

## **Questionnaires**

Questionnaires are easy to create, and this is why they are used by most researchers (Black, 1999; Bless & Smith, 1995). The term ‘questionnaire’ can be defined as ‘a research tool used to collect data in the form of statistics, in most instances, although it is also used to ask some open-ended questions or questions that need some explanation by participants’. In a simple definition, questionnaire is “a collection of questions” (Babbie, 2007). Mavodza (2010) also attests that by using a questionnaire, statistical information about sampled participants are studied. Questions covered include information such as age, income, opinions and other aspects of people’s lives. The questionnaires are generally used by the researcher to collect data in a survey study.

Marshall and Rossman (2006) state that questions in the questionnaire are typically structured. It can also contain some open-ended questions to collect data about the population’s characteristics, attitudes and beliefs. The content of the questionnaire also has to be examined and tested. This is done to check the quality of the questions to minimise, correct or improve bias, sequential order, validity, usefulness and reliability. This was achieved by conducting a questionnaire pre-test to ensure reliable results (Babbie, 2007; Leedy & Ormrod, 2005). This is very important since the questionnaire pre-test enhances understanding of respondents to the questions, question layout, font, arrangement and flow, which also improve the response rate due to its validity and reliability to participants (Mavodza, 2010). The participants’ response rate is very important in questionnaires. Babbie (2007, p. 262), and Babbie and Mouton (2001), suggest that an adequate response rate for a questionnaire is 50%, 60% is considered to be good, and 70% is accepted as very good. They further emphasise that an acceptable response rate assists in ensuring that the total population is represented in the responses from a few participants since the results are to be generalised eventually.

In addition to the above-mentioned, Bernard (2013) provides guidelines on what he titled “fifteen rules for question working and format”, which the researcher considered when constructing the survey questionnaire. The rules discussed include that the questions should be unambiguous to avoid different interpretations by different respondents. Another rule is that the questionnaire should be distributed to



knowledgeable respondents who have the information required to answer the questions. The research surveyor should “make sure all the questions are important or useful for the survey and also provide for contingencies and filter questions to clarify certain responses.” The rules also stipulate that the researcher should make sure that the scales are clear, package the self-administered questionnaire to quickly and easily obtain ample data, and avoid inappropriate respondents. The researcher should also “ensure that the questions are exhaustive and mutually exclusive” (Bernard, 2013).

Furthermore, the questionnaire survey questions must not be long. The survey questionnaire must also provide alternative answers for each question. The researcher must avoid loaded and double-barrel questions in the questionnaire to avoid leading respondents, and not construct questions that show emotion. To eliminate controversial issues, the researcher should try to specify the referent situation to ensure that respondents check as many circumstances as they deem appropriate. Lastly, the researcher must avoid placing false premises on the questions (Bernard, 2013). Most, if not all of these rules were also discussed and supported by Babbie and Mouton (2001, pp. 234-238). Bless and Smith (1995) add that before constructing the questionnaire, the researcher must consider listing specific issues or problems of the study to be investigated, analyse the nature of data to be collected for investigating the problem of the study and eventually, formulate the questions that will specifically yield answers to the research question or prove the hypothesis.

The above-mentioned was considered in terms of to this study. Babbie and Mouton (2001), and Brewerton and Millward (2001), stipulate that aesthetics and layout of the questionnaire need to be carefully considered with the aim of making the tool attractive to respondents. They further guide that careful consideration should be given to: questionnaire instructions, the covering letter to participants, the length of the tool (too long or too short), the correct order of questions, spelling mistakes or grammatical errors, the readability of font type and size, density of the layout, and sufficient space provided for the responses (Babbie & Mouton, 2001; Brewerton & Millward, 2001).

Furthermore, this study followed most, if not all, of these guidelines in constructing the survey questionnaire. To assist the respondents, the researcher started with introductory information and guidance as to how they should complete their responses to the questionnaire questions, and under which category (such as gender and age) they fall, in order to establish their nature as also guided by Babbie (2007); Babbie and Mouton (2001). The researcher also ensured that the questions in the questionnaires were not too long to ensure that participants provided accurate feedback by reading all the questions thoroughly (Mavodza, 2010). However, questions were also spread out and uncluttered. The researcher avoided cramming questions into one line and abbreviating them. This was done to circumvent respondents from becoming demoralised and neglecting to answer certain questions properly (Babbie, 2007). In addition, questions were short, simple, clear and unambiguous. The questionnaire was professional and well-drawn up with guiding instructions at the beginning of the questions (Babbie & Mouton, 2001; Babbie, 2007; Mavodza, 2010).

For the purpose of this study, open-ended and closed-ended questions were structured together. However, closed-ended questions were central or dominant since it was mostly a quantitative study. The open-ended questions required respondents to explain their ideas in their own words or understanding. The closed-ended questions required respondents to answer questions by choosing answers from the provided lists of alternative answers (Babbie & Mouton, 2001; Babbie, 2007; Mavodza, 2010). For instance, some questions were answered by choosing “YES” or “NO” and others by choosing from multiple answers listed (Mavodza, 2010).

Babbie (2007) and Babbie and Mouton (2001) attest that the survey researcher must consider two structural requirements when constructing closed-ended questions for the questionnaire, namely, the exhaustive response category and the mutually exclusive answers category. The exhaustive response category encompasses the idea that questions must have room to accommodate all the relevant answers or responses from the respondents. For instance, some questionnaires provide space for more responses by placing the last option of answers as “Others, please specify\_\_\_\_\_”, whereas the mutually exclusive answers category states that options for answers to questions must be structured in such a way that respondents are not compelled to select all of them to ensure easy analysis (Babbie, 2007; Babbie & Mouton, 2001). Babbie and Mouton (2001) refer to these kinds of questions as “contingency questions”. The closed-ended questions assist the survey researcher with the provision of uniform responses that are also very easy to analyse (Babbie, 2007; Babbie & Mouton, 2001).

Likewise, Bernard (2013) discusses scales of questions in survey questionnaires, some of which the researcher applied to the study. The scales discussed entail a simple scale with single indicator, complex scales with multiple indicators, index (cumulative index), Guttman scales and Likert scales, which the researcher applied to this study. The simple scale typically is used to scale things such as people’s ages, e.g. “How old are you?”. In applying the complex scales, a single question is asked with many indicators to measure complex variables. An index is used for listing several answers that count the same as certain questions for researchers. The Guttman scale is used to measure the respondents’ knowledge, competencies or skills about certain things, issues or tasks (Bernard, 2013). As supported or recommended by Babbie and Mouton (2001), Babbie (2007), Kumar (2005), and Powell and Connaway (2004), some questions were designed using a Likert scale frame to measure the respondents’ attitudes. The Likert scale was formalised by Rensis Likert (Babbie & Mouton, 2001). For instance, the Likert scale frame requires respondents to choose whether they strongly agree, agree, are neutral, disagree or strongly disagree with a specific statement (Babbie & Mouton, 2001; Babbie, 2007; Bernard, 2013; Mavodza, 2010). The open-ended questions were not biased and did not limit answers from respondents as they could elaborate as much as possible, to the best of their knowledge in their responses (Powell & Connaway, 2004; Mavodza, 2010). This was because respondents used their own words without limitation<sup>1</sup>.

The advantage of the questionnaire was that it gave participants time to plan and think about their answers, contained valid and consistent information for further reference during data analysis, and was used in the absence of participants; the respondents also completed questions independently without interference from the researcher (Bless & Smith, 2000). Bernard (2013) adds that the questionnaire eliminates the researcher’s bias because questions are answered in his/her absence, and respondents all have similar questions to answers. In a self-administered questionnaire, respondents do not attempt to impress anyone since they are alone, and anonymity is strengthened (Bernard, 2013). The questionnaire was not costly; it required few resources and was used to cover a larger sample of participants (Brewerton & Millward, 2001; Leedy & Ormrod, 2013). The administration of the questionnaire resulted in travelling cost savings, and the respondents being more truthful and certain about their answers (Leedy & Ormrod, 2013). Bernard (2013) emphasises that the researcher can either distribute the questionnaire by delivering it to respondents and collecting it on another day, or by posting the questionnaire to the participants or organisation of the study. This meant that the researcher was indirectly assisted by the post office or the organisation of the study, depending on the method of distribution. For the purpose of this study, questionnaires were collected by the respondents when they visited their provincial office, and some were delivered by the researcher when visiting the participants’ institutions for records

management inspections and training. Respondents submitted the questionnaires to the provincial office when they visit it for the collection of hospital circulars and posts.

Some negative aspects of a questionnaire as a data collection tool are that it requires considerable time to compile, distribute and collect from participants. In addition, illiterate participants are not able to respond to a questionnaire and it is expensive to develop. For instance, the researcher needs a computer or typewriter, printer and paper to complete the project (Bless & Smith, 2000; Fink, 2013). Bernard (2013) highlights that with a self-administered questionnaire, the researcher has no control over how respondents interpret the questions and/or respond to them. Furthermore, the response rate is generally very low, being approximately 20% to 30%, as respondents know that the researcher does not know who responded and who did not. Another disadvantage is that the researcher may not be entirely certain whether the questionnaire recipient was the person who completed it, delegated someone to complete it on their behalf, completed it by understanding the questions, or completed it without reading the questions (especially regarding the multiple-choice questions) (Bernard, 2013). The questionnaires usually expose illiterate participants, who may also affect the response rate by pushing it lower (Leedy & Ormrod, 2013).

## **Interviews**

An interview survey is one of the alternative methods of collecting survey data (Babbie, 2007). Krathwahl (2009) finds interviews or interviewing to be a straightforward process of exchanging questions and answers between the interviewer and interviewee(s), during which the interviewer is the controller or the driver of the process. The interview may also be defined as the process whereby the researcher or interviewer arranges or initiates direct personal contact with the interviewee or participants, with the arrangement that the interviewee will answer questions posed by the interviewer during the data collection interaction (Bless & Smith, 1995). Typically, in a large population sample, the researcher resorts to appointing assistant interviewers to whom he/she delegates activities. In most instances, the researcher using an interview receives a very high response rate ranging from 80% to 85%, as compared to the questionnaire (Babbie, 2007: p. 264). The researcher developed, pretested and used the interview data collection technique (interview schedule) to collect qualitative data, by interviewing heads of clinical and nursing services, who are the key people affected by medical records on a daily basis when rendering healthcare services to patients. This meant they could provide quality information to the researcher (Creswell, 2009; Bernard, 2013; Leedy & Ormrod, 2005; Wamundila, 2008).

Furthermore, the interview was used to yield important information relating to facts such as participants' biography, feelings, motives, current and past behaviour, behavioural standards, and conscious reasons for feelings and actions (Leedy & Ormrod, 2013). However, Leedy and Ormrod (2013) also provide a guideline on conducting the interviews for a quantitative study. They state that the researcher must identify his interview questions in time and identify participants' cultural background influence on the study. Participants must be balanced in terms of representativity of the population, rapport must be established and maintained, and a suitable interview meeting place must be identified. Furthermore, the researcher must: avoid putting 'words into participants' mouth' during the exchange of questions and answers; capture responses verbatim during the interview; consider that facts are not necessarily obtained; think about quantification of responses and modification of questions as they proceed with the interviews; ask questions that can reveal qualitative data; pilot test the questions; restrict each question to a single idea; clarify certain responses, where necessary; and consider how the data will be best analysed as they proceed (Leedy & Ormrod, 2013).

The semi-structured interview schedule was used to ask open-ended questions to allow for the provision of more information being supplied by the participants. This was to avoid restricting participants from providing detailed information (Brewerton & Millward, 2001). In applying the semi-structured interview, the research was not holistically open ended, but followed the “standard questions with one or more individually tailored questions to get clarification or probe a person’s reasoning” (Leedy & Ormrod, 2013). According to Brewerton and Millward (2001) “semi-structured interviews incorporate elements of both quantifiable, fixed choice responding and facility to explore, and probe in more depth, certain areas of interest”. The interviews were conducted in different ways based on the proximity of the hospital or participant. Some participants were interviewed face-to-face or telephonically, whilst others were interviewed in groups, as guided by Creswell (2009). The other specific method used was focused group interview. Focused group interviews “involve the simultaneous use of multiple respondents to generate data” (Brewerton and Millward 2001). In applying this interview method, the researcher depended on the availability of participants. The number of participants involved in focused group interviews usually range from a minimum of four participants to a maximum of at least 10 participants, as recommended by Ritchie and Lewis (2003). The researcher used the text recording method by making notes as the participants responded, since most participants did not prefer voice recording.

However, the interview technique, as also supported by Creswell (2009), has several advantages. According to Creswell (2009), the first advantage of the interview is that the respondents can participate without any personal or physical availability of the researcher or interviewer. For instance, telephonic interview or computer-assisted interview can be used. The interview technique makes it easier for the researcher to collect information relating to the respondents’ or participants’ historical backgrounds, since immediate probing is possible, and the researcher is also able to channel the mode of questioning (Creswell, 2009). Babbie (2007) and Bless and Smith (1995, 2000) state that with an interview, participants or respondents have the opportunity to ask immediately for further explanations from the interviewer, should they not clearly understand the questions properly. In doing this, the respondents would not give irrelevant answers based on the reason that they did not understand the questions properly, because incorrect interpretation of the questions will be clarified before any question is responded to. During an interview, there is no room for participants to plan or justify wrong answers or hide the correct or true answers due to the immediate demand for answers. It also allows participants to elaborate on their answers due to its unlimited space to provide information. The interviewer also took the opportunity to ask respondents to repeat responses where they were not clear and to state those answers clearly or in an understandable manner, which enabled proper recording of responses and an immediate understanding of the information provided (Bless & Smith, 2000). It provided for the elimination of irrelevant questions and correction of ambiguous questions. The researcher also has the opportunity throughout the interview to realise new aspects pertaining to the problem from the participants’ responses. In addition, the interview enabled data collection from illiterate participants who were not able to read and/or write properly. It also enabled the researcher to include questions that collect data that was missing or not collected using other collection tools such as questionnaires and observation. Furthermore, the researcher had the opportunity to encourage participation to provide more information than required (Babbie & Mouton, 2001; Bless & Smith 2000; Leedy & Ormrod, 2013).

Other advantages are that, unlike distributed questionnaires, it is never easy for the participants to reject participation in the interview in front of the interviewer, as the interviewer may observe some characteristics based on the study when respondents participate or talk; the researcher also has the opportunity to probe for answers immediately (Babbie, 2007; Leedy & Ormrod, 2013; Bernard, 2013).

Brewerton and Millward (2001) underscore that an interview provides for “rich data”, since the researcher obtains the exact meaning from the respondents, is flexible to the extent that it can be utilised at any stage of the study, and can be applied in multi-methods with other techniques such as observation and related techniques (Brewerton & Millward, 2001). They further elaborate that an interview gives the advantage that the interviewer is available to probe more relevant answers, clarify complex instructions or questions to interviewees, and ensure “co-operation, rapport and confidence-building” (Brewerton & Millward, 2001; Leedy & Ormrod, 2013). Babbie and Mouton (2001) and Bernard (2013) emphasise that with an interview survey, respondents who are illiterate or non-literate, blind, bedridden, or very old, are also able to participate without any barriers. The researcher may cover or pose both open-ended and closed-ended questions in the same interview survey for each respondent. During an interview, the researcher can see who is responding, although he/she has to keep anonymity; likewise, respondents can see or hear one question at a time, because they do not have the opportunity to see or read through all the questions before providing responses (Bernard, 2013).

Nevertheless, interviews, like other data collection techniques, have several disadvantages. Creswell (2009) states that the disadvantages of an interview technique are that it may be biased as it is based on the presence of the researcher, participants may not equally express their perceptions, and they may also give information according to their views, rather than the real situation in the field. Bless and Smith (2000) emphasise that participants may feel discouraged or shameful to express the real situation or their feelings. Bias may emanate from the researcher’s poor recording of responses since incorrect information may be recorded due to misinterpretation and misunderstanding. The interviewee may not feel anonymity and privacy in terms of identification, since they will be in direct contact with the interviewer. Some questions, especially those that touch on private and confidential issues, may embarrass respondents (Bless and Smith 2000: p. 108). In some instances, participants can always avoid the interview by claiming to be too busy all the time (Leedy & Ormrod, 2013). An interview is also time-, energy- and money-consuming, since participants may be interviewed one by one at different geographical locations unless (Bless & Smith, 2000; Oppenheim, 1992). These costs can be minimised with telephonic interviews (Bless & Smith, 2000; Oppenheim, 1992).

Brewerton and Millward (2001) state that the other disadvantages include: the interview is expensive since interviewers need to be trained; it requires more logistical equipment and travelling, more time is needed for analysis of descriptive data and conducting it; accessibility of participants is not always easy due to scattered geographical locations, the interviewers’ presence may lead to biased responses; and data may not be reliable due to bias incurred. Bernard (2013) underscores that a face-to-face interview is “intrusive and reactive” and it can be very costly and time-consuming if the researcher does not have assistant interviewers.

## **Observation**

Observation is a data-collection technique whereby the researcher personally sees the events, actions and experience without any interference from the population or institution of the study (Ritchie & Lewis, 2003). Bless and Smith (1995) underscore that observation as a data-collection tool needs systematic planning that involves the question of what issues should be observed and how to observe them. The observation data recording should also be systematic, objective and standardised, through the maintenance of proper control and recording skills (Bless & Smith, 1995).

Furthermore, this observation technique is divided into participatory or participant observation, during which the observer forms part of the observed team by participating in their activities with them (Bernard, 2013; Brewerton & Millward, 2001). During Non-participatory observation, also known as simple observation (Bless & Smith, 1995), the observer sits back, observes and takes notes of what is happening or what participants are doing (Bless & Smith, 1995; Brewerton & Millward, 2001). Bernard (2013) and Bless and Smith (1995), state that the researcher may approach the observation task as a participant where he/she acts like a participant and not like a researcher in his/her interaction with the people involved, or as participant observer, where the researcher follows participants, and observes and records what they are doing.

Bless and Smith (1995) attest that both methods of observation have advantages and disadvantages. In applying simple observation, participants may change their bad behaviour and try to be smart, realising that they are observed. In this case, the information collected may not be realistic. Participant observation may result in the researcher acting emotional or sympathising with participants and becoming biased towards the outcomes of the study. Furthermore, recording will have to be done secretly during this process (Bless & Smith, 1995).

However, for the purpose of this study, the researcher used non-participatory observation. This technique is usually used as a last step where the researcher looks at the research environment while measuring what is happening (Babbie, 2007). The observation data collection technique was used to collect qualitative data by way of observing the state and the mode of record management operation in different hospitals in Limpopo (Creswell, 2009); observed behaviour was also quantified by counting occurrence, and rating the accuracy, intensity, maturity and other dimensions (Leedy & Ormrod, 2013). The semi-structured observation schedule was created and used as a reference source for the researcher to remember which observations were important to note. Creswell (2009) states that the advantages of this technique are that first-hand experience is acquired by the researcher, real information is recorded immediately, and the researcher can, eventually, detect topics suitable to discuss with participants. However, the disadvantages of this technique are that the researcher may be denied access as an intruder, some information may be restricted from reporting, and observation skills may be lacking from the researcher's point of view (Creswell, 2009).

## **Document Assessment/Analysis**

Document analysis is about studying the created documents of the organisation that are available with the main purpose of understanding the content or details/information covered (Ritchie & Lewis, 2003). Bernard (2013) refers to document analysis as archival research in which archived records are studied. He also feels that this kind of data-collection technique is not reactive. The document analysis techniques were used to assess information in the policies, procedures, standards, reports and other relevant documents (Creswell 2009). As also supported by Ritchie and Lewis (2003), this kind of data-collection technique may also be used to collect data from documents such as reports, government papers, materials and procedural documents. This information was used to determine the quality of the guiding documents for medical records management in the hospitals and the state of records management as also reflecting in the reports, as also guided by Ritchie and Lewis (2003). Creswell (2009) states that document-assessment techniques have the advantage of being performed in a convenient time and provide thoughtful data and written evidence. Nevertheless, the disadvantages are: documents may be protected; access to docu-

ments may be denied, the researcher hardly has to search for the documents and documents may not be complete and accurate.

## **Data Analysis and Presentation**

Data analysis is the process of identifying the patterns and themes from the data, after which the researcher comes to a particular conclusion regarding the study findings (Bernard, 2013; Mouton, 2002). After the researcher analysed data, he searched for data patterns and ideas about the existence and state of data collected (Bernard, 2013). During this stage of the research, data was interpreted to ensure that it makes sense to the reader (Creswell, 2013), particularly after it was edited, summarised, captured and error checked to eliminate or correct abnormalities and other weaknesses (Singleton & Straits, 2010). This assisted the researcher in obtaining the true meaning from the data analysis, as accurate data provides the true meaning from respondents. Data analysis assists the researcher in determining the meaning of the data collected from participants (Johnson & Christensen, 2008), by converting the information or data collected into the answers to the questions of the study (Creswell, 2009; Terre Blanche, Durrheim & Painter, 2006).

Furthermore, during data analysis, data was reduced, displayed, transformed, correlated, consolidated, compared and integrated. The data was also logically arranged, examined, synthesised and lastly, generalised for the entire population of the study (Bryne, 2001; Wamundila, 2008). Analysing data also assisted the researcher in comparing the data collected with related theory, especially theory discussed in the background and literature review to test the hypothesis or answer research questions (Singleton & Straits, 2010). This brings about a better understanding in terms of social process operations to certainly interpret, conclude and recommend solutions or improvements at the end of the study (Ngulube, 2005a). Data analysis also assisted the researcher in detecting respondents' consistency on the data pattern, such as variables covariance consistency (Bless & Smith, 2000). The data analysis was conducted and presented using tables, charts, graphs and statistical summaries as supported by Ngulube (2005a: p. 138) and Bernard (2013) and used in the findings of Ngulube (2005b). The researcher arrived at this by using two data analysis matrices, namely, profile matrices to analyse the relationship of variables and proximity matrices to analyse proximity within variables such as similarity and dissimilarity (Bernard, 2013).

Furthermore, this study used a triangulation of multi-methods in analysing the data. This implies that the researcher incorporated, consolidated, compared and integrated both qualitative and quantitative data (Creswell, 2003). Among other things, the multi-method enabled the researcher to ensure that data was clean and that reviewed responses were valid (Greene, 2007; Mavodza, 2010). As alluded to by Terre Blanche, Durrheim and Painter (2006), the qualitative method assisted the researcher in realising ideas and arguments relating to the study problem. The quantitative data was analysed using the descriptive and inferential statistics (Bless & Smith, 2000; Creswell, 2009). "The end-product of the qualitative method is text that includes image and drawing, while a quantitative method output numbers as outcomes of analysis" (Fidel, 2008; Punch, 2006). Babbie (2007) and Bernard (2013) add that in quantitative data analysis, data is converted into a numeric arrangement and analysed in a statistical way. The qualitative methods were more focused on the nature and interpretation of the understanding of the situation in the study, such as population values, decisions, beliefs and actions (Ritchie & Lewis, 2003). The researcher differs from Bernard (2013), who says, that in qualitative data analysis, words are converted to numbers, while the researcher agrees with him by saying that in quantitative data analysis, the process of analysis is statistical and mathematical when dealing with data of a numeric nature.

However, according to Babbie and Mouton (2001), data analysis is usually preceded by activities such as the capturing of data into the computer that is installed with relevant data analysis software, and cleaning and categorising, or coding the data, in line with the data capturing system or database. Creswell (2014) recommends that the researcher should specify the kind of data analysis tools and whether he used a manual or electronic (software) mode of data analysis. In many scientific research studies, researchers popularly use software such as SPSS® data analysis software to analyse quantitative data (Babbie, 2007; Babbie & Mouton, 2001; Leedy & Ormrod, 2013), as was the case with the study conducted by Jayasundara (2009); Makhura (2005) and Wamundila (2008). The other statistical data analysis software mentioned by Leedy and Ormrod (2013) in their discussion about quantitative data analysis includes what is called SAS, SYSTAT, Minitab and Statistica. Word-processing software such as Microsoft Word® is normally used to analyse qualitative data, which includes organising and interpreting the data (Leedy & Ormrod, 2013).

Furthermore, Leedy and Ormrod (2013) underscore that for complex qualitative data, software such as Atlas.ti, Ethnograph, SuperHyperRESEARCH, Kwalitan, MAXQDA and NVivo may be applied for deep analysis, which includes storing, segmenting and organising the data. In addition to the above, Babbie and Mouton (2001) list other types of data analysis software such as ABtab, AIDA, A.STAT, BMDP, DAISY, DataDesk, CRISP, DATA-X, Dynacomp, INTER-STAT, MASS, MicroCase, Microquest, Microstat, Micro-SURVEY, Ministab, POINTFIVE, P-STAT, SAM, SAS, SNAP, STATA, STAT80, Statgraf, Statpak, StatPro, STATS PLUS, Statview, Survey mate, SURVTAB, SYSTAT, and TEGPACS, to name but a few.

Leedy and Ormrod (2013) recommend that the researcher can also Microsoft Office Excel spreadsheet software, or a sphygmic software spreadsheet, simple spreadsheet, spread32 and many more that are downloadable on the internet, free of charge. They elaborate that a spreadsheet also has significant advantages since it can help the researcher to sort data in rows and columns. A spreadsheet assists the researcher by: sorting data in many ways within rows and columns; recoding data by creating new columns or rows as required for analysis; creating formulas for the auto-calculation of captured data; and creating graphical reports from the data automatically (Leedy & Ormrod, 2013). Leedy and Ormrod (2013) further elaborate on how the Excel spreadsheet can best be utilised to: keep track of literature resources; record and recode data; reorganise data; conduct simple statistical analysis; create data set; provide descriptive statistics and inferential statistics computing.

Furthermore, Creswell (2014) supports the above statement stating that the quantitative data can also be captured into the spreadsheet or database for analysis. In this study, the researcher used Microsoft Office software such as Microsoft Word® and Microsoft Excel®. Microsoft Word was used to develop a tally sheet that was designed from the questionnaire design and questions. Using the tally sheet, every questionnaire returned from the participants was tallied immediately into the tally sheet. The tally sheet was flexible to be used electronically or manually as a printout using a pen to tally. The researcher had chosen to use both manual and electronic tally sheets to back up the data, in case the other tool got lost. When capturing completed questionnaires electronically, the researcher merely increased the numbers in the relevant block on the sheet as the questionnaires were returned from participants. On the manual sheet, he provided a tally using a pen; he crossed the tallies off after every five tallies to simplify counting the tallies towards the end. The Microsoft Excel spreadsheet was also used to develop a database for capturing data after counting the tallies from the tally sheet at the end of data collection and tallying.

Furthermore, the database was also designed in relation to the questionnaire design and questions to simplify analysis. The spreadsheet database was also programmed to automatically calculate the per-



centage for each response and give the percentage figure; and to automatically give a table or graphical illustration of the figures in different designs, as preferred and programmed by the researcher. For instance, graphs may be in a form of a histogram or pie-chart. Eventually, the researcher copied the graphs and tables into Chapter four, where the data was presented, described and explained, with the support of the qualitative data. This is because the qualitative data was also triangulated into the relevant questions to support the figures or numeric information as presented in Chapter Four under the table and/or graph. Generally, quantitative data was captured, cleaned, validated and analysed using an MS Office Word tally sheet and MS Office Excel spreadsheet, and presented using tables and graphs. Qualitative data was captured and analysed using MS Office Word and presented in the form of narratives, explanations and descriptions (Babbie, 2007) in relation to the quantitative information presented. In doing this, the researcher was also reporting on “how the results answered the research questions” and drew conclusion and inferences from the results or findings of the study (Bernard, 2013; Creswell, 2014; Fink, 2013). Regarding the qualitative information or comments, analysis was carefully done by reading through the results to identify certain behaviours, attitudes and beliefs (Fink 2013). This is because the researcher had to attempt to obtain a resolution to the research problem and sub-problems by conducting a data intrinsic meaning (Leedy & Ormrod, 2013).

As also attested by Singleton and Straits (2010), in survey research, the data-analysis process includes data editing and summarising, which includes coding, data entry or capturing, and error checking (generally called data cleaning). This approach was used in this study. The data was eventually presented in the form of percentages based on the total sample or number of responses (feedback/returned questionnaire) because percentages “provide an explicit comparative framework for interpreting the distribution” of data (Singleton & Straits, 2010). Looking at the data analysis “In general, the intent is to make sense out of text and image data. It involves segmenting and taking apart the data (like peeling back the layer of an onion) as well as putting it back together.” (Creswell, 2014).

## **DISCUSSION OF THE LESSONS LEARNT**

There are lot of lessons learnt from the quantitative study. One fundamental issue is that quantitative data needs clarity in most instances for it to make sense, especially to the readers who do not have an idea about how the study was conducted and challenges that the researcher came across in concluding the statistical findings. Secondly, quantitative data without some clarification from qualitative data becomes predictive; hence the findings may be considered predictions. For instance, if hospital A receive 1000 outpatients’ headcounts in June 2017 and hospital B received only 100 within the same province or district area, it may not automatically mean patients in that district prefer hospital A to hospital B, or that people around the sphere of influence for hospital A are always ill. The reasons may be either, or both in some instances. Another example is, if medical records in hospital A are poorly managed, and in hospital B, the state of records management appears good, it may not automatically mean officials in hospital A are not skilled and competent or are not provided with adequate resources. The reality might be either or both. Therefore, quantitative methods become more reliable with clarity or augmentation from qualitative methods to make clear conclusions and reliable recommendations.

The researcher also learnt that there is a lot of confusion and contradiction about what can be considered a multi-method and what one may refer to as mixed-method research. It is still confusing when talking about single methods, mixed-methods and multi-methods, whether researcher talk to that look-

ing at the data collection instruments or questions contained in the instruments because any instrument can be used to collect any kind of data, be it questionnaire, interview, observation, content analysis, to name only a few. Or are they referring to the method of analysis – because during data analysis, whether data was collected in a qualitative form, may still be quantified and comparable. It is always possible to quantify qualitative data but very difficult, if it is possible, to convert quantitative data to qualitative data. Some researchers are of the opinion that explaining quantitative data illustrated in graphs and tables, makes it qualitative. The researcher does not agree with this notion because it is a presentation of data collected; one could say, an interpretation, which cannot be labelled as data. It is a presentation of the researcher's understanding of the data collected and not data expressed in a qualitative form. For instance, questionnaires are popularly used for quantitative data collection simply because in quantitative study sample is more instantly very high to ensure that findings are possible to generalise but that does not mean it may not be used to collect qualitative data. The researcher may formulate explanatory open-ended questions for participants to fully express themselves. Interview, observation and content analysis are also popularly used when collecting qualitative data; however, it does not prevent the researcher from using these tools for collecting quantitative data. It depends on the design of the tool and the type of data to be collected. For instance, one may use a checklist for ticking interview responses or situations being observed or discovered in the content analysis such as system or documents analysis, which may eventually be quantified and interpreted. Therefore, to augment or clarify statistical data, one needs to include the 'how?', 'why?', 'when?' 'who?' and 'what?' questions. This may assist in validating the quantitative report, and will assist the researcher in providing appropriate recommendations that are reliable, trustworthy and not misleading. This will also give the researcher confidence in terms of his/her findings and report.

The key lesson learnt in this study is that in scientific research method, quantitative method alone may be used. However, it may be difficult to rely on it or trust the findings and interpretations because it will always leave the reader with many unanswered questions that need further research to be answered. Therefore, quantitative researchers always flush back to augment with a bit of qualitative data on the process of their study or in the middle of their study. Some studies state that a multi-method may comprise a combination of various quantitative methods, and therefore, one would be sceptical about the value added to the study because it will be a mixture of statistics. It is like asking one deaf-mute person to assist the other. This would not be possible because together they cannot hear or talk; rather ask someone with the ability to hear and talk to assist. Generally, it is very difficult to purely and independently apply quantitative methods, without the addition or support of some limited amount of qualitative data.

## **FURTHER RESEARCH STUDIES**

Further studies may be focused on research issues such as research paradigm, and where there are still differences, confusion and frustration in the literature about what exactly the structure of paradigms in research is. Where does it start, what are the epistemologies and ontologies, what exactly is above or below the other, what comes first and what must be last, and how do these inform one another?

## **CONCLUSION AND RECOMMENDATIONS**

Based on the lessons learnt and the literature studied throughout the research, the Chapter was able to formulate a framework that intends to guide fellow researchers on different categories of methods, which may be applied in social scientific research, and the names that may be applied to such methods. This may also serve as a benchmark for further studies in this area of study. Looking at the illustrative framework displayed in Figure 2, the framework structure is categorised into three major methods, namely: (A.) Mono-method research approaches, (B.) Multi-method research approaches, and (C.) mixed-method research approaches. The framework also shows ingredients for research methods illustrated with colour coded arrows; this shows the mixture of ingredients for each method. The ingredients listed in the framework are also colour coded as follows: full qualitative method, partial qualitative method, full quantitative method and partial quantitative method. The research methods A, B and C in the framework can be described based on the ingredients on the right as follows:

### **Mono-Method Research Approaches**

Mono-method research in this study refers to either *qualitative method* or *quantitative method* that is applied in the social science research independently without data augmentation from any other method. This is the kind of research method that is applied independently without any support from any other method. For example, the researcher may choose to utilise only qualitative interview data collection instruments with all open-ended questions. Data may eventually be analysed, interpreted and discussed without any augmentation of data from any other method. This may be highly possible with qualitative method, but it may always be difficult should it be possible with the full quantitative method. This is because numbers or figures will always remain numbers until the researcher express interpretations, and the interpretation may not always be truthful. Interpretation without some support or confirmation from qualitative data in quantitative study, may at most, remain predictions that may be incorrect at times.

### **Multi-Method Research Approaches**

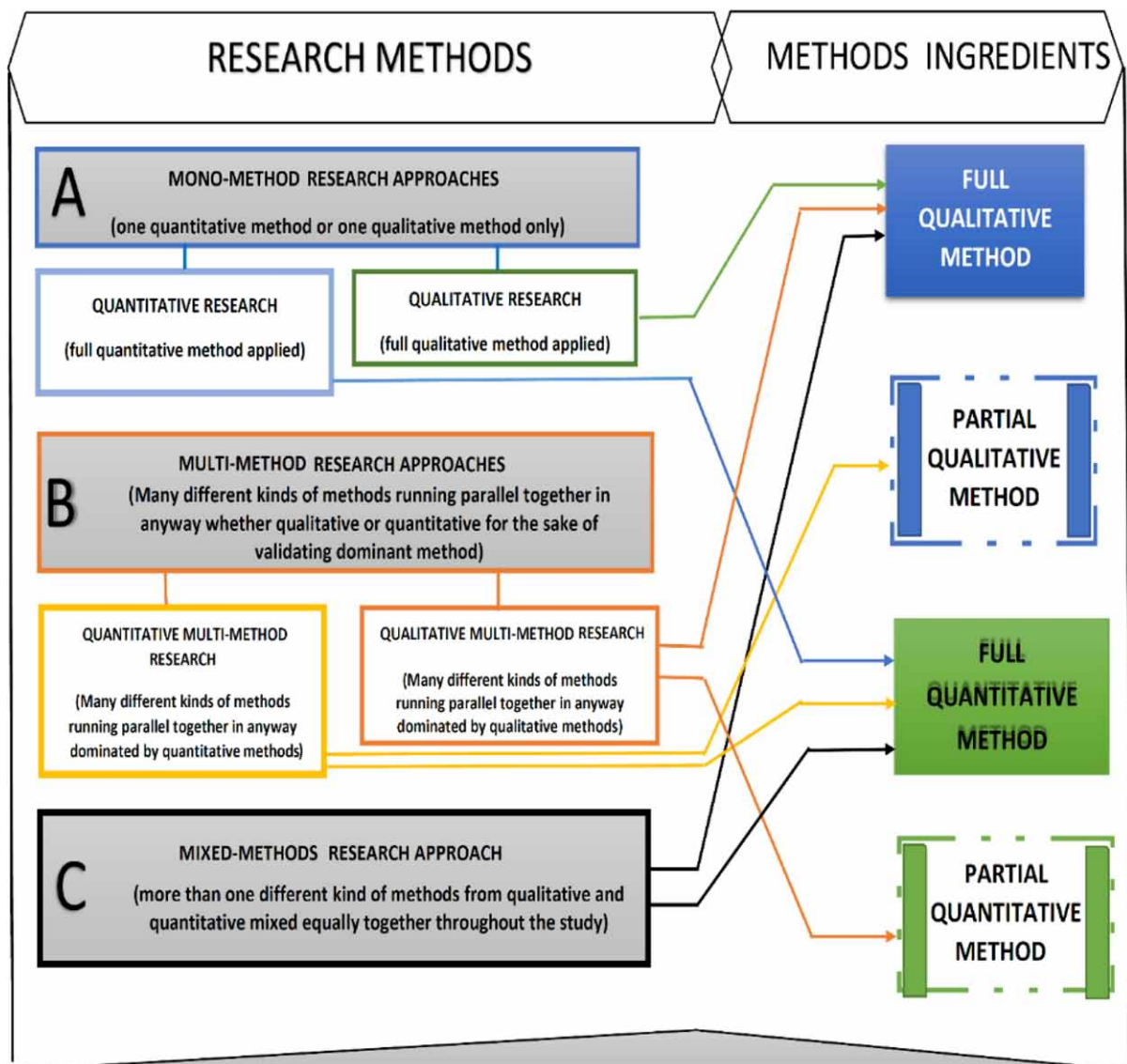
The multi-method research approach refers to research where either a qualitative or quantitative method is fully applied in the study but with the partial augmentation from other methods. For example, a quantitative questionnaire with closed-ended questions or leading questions may be fully applied, but partially augmented with open-ended questions interview, observation or documents analysis methods. Similarly, full open-ended questions interviews may be partially augmented with closed-ended questionnaire. This may be applied with the use of different kinds of methods. This implies that a multi-method research approach may be applied in two different categories, which are the *quantitative multi-method approach* and *qualitative multi-method approach*, depending on which method dominates the research process.

### **Mixed-Method Research Approach**

There is a lot of confusion, contradiction and frustration in the literature about what a mixed-method is, and what can be referred to as a multi-method research. The mixed-method research entails an equal mixture of more than one different method, which is quantitative and qualitative in form. For instance, a fully open-ended questions qualitative interview method mixed with a fully closed-ended questions

quantitative questionnaire method, warrants a mixed-method research approach. Unlike the multi-method research approach, where the methods do not have to carry the same weight, in a mixed-method approach, the methods are opposite and carry the same amount of weight from the beginning. This means in a mixed-method approach, both methods are planned together from the onset, unlike the multi-method, where some gaps may be realised during the study and another method is initiated to close such gaps. Therefore, the mixed-method research approach is impossible to categorise into more than one approach, because it remains neutral by balancing both the qualitative and quantitative methods. Hence, it remains a mixed-method research approach and will never be divided into a quantitative mixed-method or qualitative mixed-method approach.

Figure 2. A framework illustrating a typical research method based on methods ingredients



It is therefore hoped that this framework will assist social science researchers in clearing up confusion about what the research methods entails. It is also believed that there are still a lot of issues that need to be clarified in scientific research. This Chapter specifically focused on the categorisation of mono, multi and mixed social research methods. In some instances, a multi-method may not always mean the methods are mixed. It may be that methods may be applied together with the data collected and presented parallel and separately, and finally integrated during analysis for interpretation, discussion, summary, conclusion and recommendation.

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## **ENDNOTES**

- <sup>1</sup> The key purpose of this chapter is to present the lesson learnt in the application of multimethod research from the author's PhD research project completed in 2016, supervised by Prof Patrick Ngulube and Prof Mpho Ngoepe as promoter and co-promoter respectively. In other words, information presented in this chapter was partially extracted from the study.

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Section 2

# Ethnography and Autoethnography



# Chapter 8

## Self–as–Subject for Doctoral Research

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### **ABSTRACT**

*This chapter presents reflections on the use of self-as-subject research within doctoral education as a pathway to explore meaning of study phenomena to uncover new knowledge from the individual of the self. Knowledge is contextual and discoverable from within this rich internal experience of the researcher-participant and extant and contemporary perspectives are presented to illustrate the importance and appropriateness of the selection of self-as-subject research methods including autoethnography and heuristic inquiry for doctoral-level research. The importance of the relational aspects of the doctoral researcher and doctoral research supervisor is briefly considered as well as contextual and institutional aspects necessary to inform doctoral researchers who may choose these methods of inquiry.*

### **INTRODUCTION**

*What is needed is, in the end, simply this: solitude, greater inner solitude. Going into yourself and meeting no one for hours on end, that is what you must be able to attain. – Rainer Maria Rilke (1934)*

In the first chapter of *The Self*, author and editor Clark Moustakas (1956) said, “Experience is true to the person when he is himself alone. In such experience perception is unique and undifferentiated” (p. 3). It is this unique and undifferentiated inner self that can serve as the subject of research and holds an available wealth of unknown waiting to be explored within doctoral education by means of systematic, empirical research methods designed specific to explorations of self-as-subject. However subjective a study of self may be for the researcher, the nature and conventions of systematic empirical data collection and analysis can serve as a vehicle to uncover previously unknown findings not clear to the subject-as-researcher to better understand the dynamic whole self, society, culture, world. The research approaches discussed in this book, specifically autoethnography and heuristic inquiry (HI), are two sound, coherent, and systematic approaches used by doctoral researchers desire to explore “epiphanies” whereby

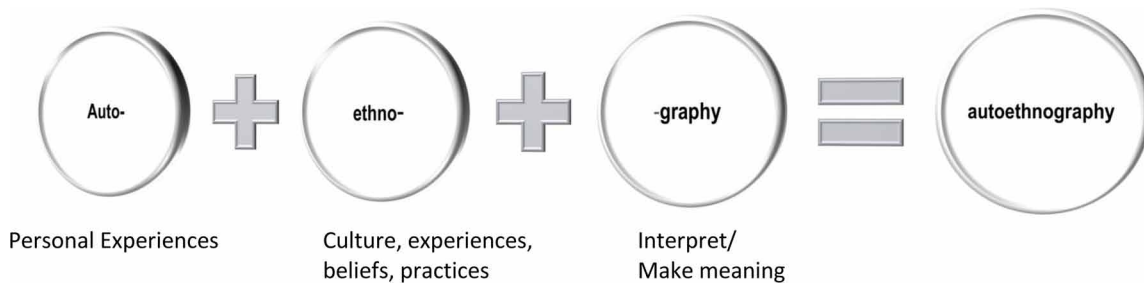
DOI: 10.4018/978-1-6684-3881-7.ch008

## Self-as-Subject for Doctoral Research

a transformative experience warrants further inquiry of the lasting, deep, and rich recollections that persist from the phenomenon. These transcendent phenomena, as Moustakas noted, are worthy of as a deep examination as much as any physical ailment or disorder, and he later systematized the process of examination of this human experience using the Greek origin for heuristic inquiry to discover or find meaning from this lived experience of self by using empirical research methods (Douglass & Moustakas, 1985). Moustakas, 1990, 2001).

While the parallels between HI and autoethnography were described by various researchers throughout the 1980s and 1990s, Ellis and Bochner (2000) described autoethnography in their extant work as an iterative cycle of first looking at the outer then inner, then reiteratively inner to outer, until personal and cultural or societal perspectives become blurred. Later Adams, Ellis, and Jones (2017) defined autoethnography as a method to gather the personal experience to interpret larger cultural, social, political, experiences, and beliefs utilizing a systematic method of rigorous self-reflection or reflexivity (Figure 1). Further, Bochner (2018) noted rigor in autoethnography must be pragmatic and literary-based and not use traditional scientifically-based forms of rigor. Instead, rigor should be replaced with measures for resonance and evocation as autoethnography, performance research, or other arts-based research are as much forms of expression as inquiry and should be evaluated within this context (Bochner, 2018).

Figure 1. Autoethnography as reflexivity (adapted from Adams et al., 2017)



Likewise, Moustakas (1990) noted HI as a way of knowing that comprises the investigator's consciousness, perception, sense, and knowledge to collectively elucidate further knowledge, and ideally a better understanding of new regions of the self to inform the greater human experience through reflexivity (Figure 2).

Thus, reflexivity is necessary within self-as-subject, whether autoethnography or HI, to allow the researcher to embed the investigator's experience within the self, amidst the scholarship of theory and practice (McIlveen, 2008). In the representation phase, both methods allow for interpretation of meaning from the inner to the outer reflective analysis of experience, which only the heuristic researcher or autoethnographer can form or articulate individually or collectively (such as in collaborative autoethnography), from a systematic introspective and reflexive consideration of a lived construct or phenomenon.

For many doctoral programs across disciplines, these very human, intrinsic, and experiential self-focused phenomena are allowed as a basis for doctoral research and a root for further elucidation in a doctoral-level research project or dissertation research study. For some doctoral scholars, the very nature of self-introspection as research can be fraught with self-doubt as a doctoral scholar may fear these methods are lesser in rigor than methods that involve the study of others (Learmonth & Humphreys,

Figure 2. Heuristic inquiry as reflexivity (adapted from Moustakas, 1990)



2011). For other doctoral researchers, considerations for use of autoethnography or heuristic research are necessary and situated as secondary critical representations when an empirical study of the experiences of other human subjects or archival data gathered from others is required or expected. Yet, the journey of the self is often recorded concurrently and may be examined post-hoc or contemporaneously in other academic forms (journal articles, conference proceedings, or arts-based research products) as a companion to the representations of others.

For those who engage in heuristic introspection as a means to empirical research within doctoral education, and not purely as life story, this self-identification may bring valuable evidentiary insights beyond the earned doctoral degree and a published research study, but one deeper, wider, and form more vast epistemological reflexivity as much as personal reflexivity whereby the narrative brings empathy and understanding of others (Goodall, 2016). Finally, others have argued that as systematic research methods, HI and autoethnography are misnomers thereby too eclectic, wide-ranging, unclear, or undistinguishable (Charmaz, 2006) or even hedonistic, solipsistic, too emotive, self-indulgent, moot fictions (Etherington, 2004; Jones, Adams, & Ellis, 2016; Salzman, 2002) or simply ambivalent with resistance to the unqualified surrender necessary for emergent knowledge especially necessary for HI or Sela-Smith's (2002) adaptation as heuristic self-search inquiry (HSSI). Regardless of the critics of these methods, it is important for a doctoral scholar who chooses these methods for doctoral research to work with a research supervisor who offers the firm hand of an experienced autoethnographer or heuristic researcher as research supervisor.

Regardless of whether the doctoral scholar aligns the doctoral study with a heuristic or autoethnographic approach, it is essential the research supervisor be comfortable with the evocative or provocative writing-as-inquiry that emerges from such personally-centered work when it comes to demonstrations of research in doctoral education, preferring more objective or traditional means and modes of discourse or discount them altogether as non-rigorous. Thus, it is assumed within either approach, the research supervisor will possess the agency to appropriately guide the doctoral scholar successfully through self-

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as-subject research (Throne & Oddi, 2019) with the requisite knowledge and resolve to assuredly guide a heuristic researcher or autoethnographer to meet the rigorous expectations of empirical work expected at the doctoral level of research to explore the lived experience of self-as-research-subject. For example, Ings (2014) summarized the non-neutral multiple roles a doctoral researcher must employ to successfully guide a new doctoral investigator through self-as-subject research and said,

*My role as a supervisor shifts with the journey of the thesis. I am at times a mentor, a critic, a proactive planner, a reasoned objector, and occasionally, a shoulder to cry on. This is not soft supervision. It is simply responsive. It recognises that the import of the self into a research project is more than an intellectual decision. It is also an act of faith with emotional consequences. (p. 689)*

Likewise, autoethnography emphasizes the self as the subject of an empirical research study within doctoral education. Ellis and Bochner (2000) offered a consistent definition for this research design as *auto* (the self), the *ethno* (culture), and *graphy* (the research process), which remains often-cited as a generally accepted definition while the nuances of this choice of research design remain highly debated as to the suitability for a culminating doctoral research study. Yet, in spite of the debate, the use of autoethnography in doctoral education continues as widely accepted across disciplines and institutions, and Marx, Pennington, and Chang (2017) said autoethnography translates the personal to social science research with accessible self-as-subject representations that may inform a larger context, and many have used autoethnography reveal unheard voices of experiences to inform larger sociocultural contexts. Meanwhile, critics of the expanded use of the design have disparaged emphasis on the self has resulted in loss of research of others especially when autoethnography incorporates others beyond the self (Moors, 2017). This chapter presents current research insights into the appropriate selection of an autoethnographic research design for doctoral-level inquiry including the ongoing debate over the justifications for autoethnography as rigorous research in the context of the extant literature, the negotiation between doctoral researcher and research supervisor for the acceptance of this research approach, the institutional and external ethical assurances needed, and various frameworks often utilized with autoethnography.

Many proponents of the acceptability of autoethnography as a doctoral research design share new insights into what others refer to as an *avant-garde* form of qualitative research (Stahlke Wall, 2016) while still others debate whether autoethnography is a form of writing or a form of research (Moors, 2017; Denshire, 2014). Still many others offer a clear path to use of autoethnography as a rigorous research design (Le Roux, 2017) appropriate for doctoral-level inquiry and culminating doctoral research studies needed for the terminal degree. Perhaps some doctoral scholars are attracted to critical autoethnography as a needed call to this research design due to an engaged passion to remedy a social wrong, harm, or indifference in pursuit of social justice and action as research (Bochner, 2018), resistance and emancipation politics (Denzin & Giardina, 2018; Finley, 2018), and to successfully defend inquiry in areas important to the doctoral researcher's positionality (Bourke, 2017; Throne & Bourke, 2019). Regardless of motivation, autoethnography as research approach is appropriate and relevant for doctoral research when readily supported by a research supervisor with agency to guide a new investigator in the use of self-as-subject research at the doctoral level.

Yet, persistent researcher positionality with fidelity may allow for a doctoral scholar to engage and negotiate the selection and use of autoethnography as doctoral research design with the research supervisor for doctoral-level study as the supervisor may or may not have prior experience with autoethnography (Dumitrica, 2010; Throne, 2018) and may initially resist solely based on a focus of self-as-subject. Research

supervisors well-versed in guiding autoethnography, and who possess agency (Throne & Oddi, 2019) may caution new investigators in the choice of self-as-subject research initially due to understanding the barriers and difficulties the scholar may face in using memory as data or navigating reflexivity versus confessional writing, interpretation of reflexive narrative versus ethnodrama, evocative versus analytic autoethnography (Anderson, 2006; Humphreys, 2005; Winkler, 2018), or the very landscape of ethical issues and rigor surrounding self-generated data for analyses (Hughes, Pennington, & Makris, 2012). Thus, while some may argue memory as an examined construct is unnecessary, the subsequent use and purpose of memory within autoethnography may pose limitations to study results unless straightforwardly identified within the limitations of a traditional doctoral dissertation or thesis. This redress of the use of memory as a data collection vehicle or for critical reflection or reflexivity, may resolve concerns of the reader as to the ambiguity and ever-changing depictions memory can create.

Regardless of the challenges of autoethnography, like other specific research designs, many doctoral scholars negotiate successfully with research supervisors and proceed to successfully defend autoethnography as relevant and rigorous doctoral-level inquiry. Guided firmly by the qualified research supervisor with agency, this autoethnographic research design will then encompass much more than a collection of observatory field notes or artifacts gathered contemporaneous to an internal experience of the self or what some may view as self-indulgent data collection (Le Roux, 2017; Winkler, 2018). As the commonly used Heraclitus' quote (cited by Plato, *Cratylus* 402a) illustrated, the uninterrupted flow meant no person can step twice into the same river; likewise, no autoethnographer can replicate data analysis later from an autoethnographic study—as subsequent to the study, the researcher-as-subject has changed, evolved, transformed, and likely to see insights in analysis not readily apparent earlier or even erroneous insights from the former analysis. These transformative experiences within analyses coupled with researcher positionality can certainly vary post-doctorate once the terminal degree is attained from those identified as doctoral candidate and shift even further once the researcher enters the academy (Golding & Foley, 2017; Stanley, 2015; Throne et al., 2018). Further, it may be the very fluidity, flexibility, and shape-shifting aspects of autoethnography (as Ellis et al., 2011, noted both process and product) as a doctoral-level research design that appeals to the doctoral scholar and remains the ideal approach to explore the specific lived construct or phenomenon of the inquiry within a larger psychological, societal, educational, artistic, or professional context (Denshire, 2014).

It is typically understood within doctoral pedagogy that the doctoral scholar will move beyond graduate student to evolve to an independent investigator when course work has completed, and the scholar commences on the design of an inquiry to culminate the terminal degree for the discipline (Carter & Gunn, 2017). To foster this evolution, Mertkan and Bayrakli (2018) called for a research supervisor with agency and cognizant of the relational flow between scholar and supervisor to ensure the doctoral scholar working within the qualitative paradigm has read and reflected upon various types of qualitative studies and the philosophical tenets of each before it is determined whether the specific qualitative design is aligned with the research focus.

When the research design choice is settled and agreed upon to include autoethnography, and the research supervisor or other research oversight has given blessing to do so, the boundedness of the research approach must be also considered within the frame of the doctoral research requirements, which may add layers and structure to the more typical ambiguities of autoethnography (Custer, 2014; Qutoshi, 2015).

These bounds for autoethnography may not necessarily be the same for a post-doc researcher or scholar conducting autoethnography outside of a doctoral program; however, when autoethnography is the selected research approach within doctoral education, it is essential for a doctoral researcher to

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also understand the prescriptive institutional guidelines of the doctoral program as these must also be considered within the context of an autoethnographic research design (Forber-Pratt, 2015; Ings, 2014; Rubinstein-Avila & Maranzana, 2015). For example, one challenge that may follow the successful negotiation and approval for autoethnography within a research proposal may be the attainment of institutional approval to conduct the study through institutional review boards, research review committees, or other ethics oversight, external examination, and the like (Forber-Pratt, 2015; Honan & Bright, 2016; Stahlke Wall, 2018; Wall, 2008). Ellis (2007) accentuated relational ethics can be elevated for autoethnography especially in reporting characteristics that may identify others, which should be considered and fully articulated to meet doctoral committee and external requirements for the autoethnographic doctoral study. Thus, when a range of voices are incorporated into autoethnography beyond the self-as-researcher, consideration must also be given to the privacy and confidentiality of others (Ellis, 2007; Stahlke Wall, 2016). In turn, doctoral researcher Kaukko (2018) reported less of a need for scientific objectivity and an increased emotional investment in others, which also require the assurances for privacy, confidentiality, and other ethical assurances for involving other human subjects within self-as-subject research.

Stahlke Wall (2018) also noted while doctoral scholars today may have more receptivity to work done than those a decade ago, due to the numerous resources available and improved receptivity of autoethnography for doctoral-level inquiry across various types of institutions, the debate between evocative, descriptive, interpretive, analytic, and critical autoethnography ensues (Marx et al., 2017). Doctoral researchers must establish the conventions of the specific type and design of the autoethnography to best situate and demonstrate the work as fitting within the tenets and other expectations for the discipline and the respective doctoral institution. For example, evocative autoethnography may be accepted within a doctoral-level fine arts program but may not be accepted within a doctoral-level social sciences program where traditional analytic autoethnography may be expected; yet, evocative autoethnography may be acceptable at another PhD social sciences program at another institution.

Graduate researchers who have utilized autoethnography have referred to the transformative aspects gifted through the research process (Custer, 2014; Qutoshi, 2015) including boundlessness and timelessness characteristics that sometimes remain suspect by proponents of analytic autoethnography (Anderson, 2006); yet, partial perceptions of analytic versus evocative autoethnography have been mediated in recent years and tempered agreements conveyed as to how the design can successfully be employed (Anderson & Glass-Coffin, 2013; Winkler, 2017). The transparency and emotional exposure many autoethnographers experience in conducting the inquiry can be transformative but may also be limited by the bounds of doctoral research where the authorship becomes visible and opportunities for pseudonyms not possible, which may be available in other forms of representation (Ings, 2014).

Qutoshi (2015) reported the importance of autoethnography for transformative learning through the conventions of construction, interpretation, critical analysis, and reflexivity. Further, Stahlke Wall (2016) indicated the transformative effect of autoethnography exists beyond the individual to encompass social justice means and called for use of a more moderate autoethnography to “combine the power of the personal perspective with the value of analysis and theory, so that sociological understanding is advanced in ways it might never have otherwise been” (p. 8). Or as Ngunjiri, Hernandez, and Chang (2010) put it, autoethnography offers a better lens to view humanity and the understanding of “self in social-cultural context” (p. 13). This moderate application for doctoral education, within the rigor and expected confines of the doctoral research requirements, may allow the doctoral scholar to justify the use of autoethnography not only for personal insight, but with scholarship-supported contributions to the discipline and a better understanding of the research focus, which is often an expected demonstrated

outcome of a culminating doctoral-level inquiry to earn the terminal degree within the field of study. Finally, this moderate approach with fidelity may assure a qualitative autoethnography is able to undergo inspection of rigor and relevance, and the autoethnographer as a responsible principal investigator is able to offer the ethical assurances expected of other specific qualitative research designs used within the doctoral program or institution. Le Roux (2017) described five criteria to consider when demonstrating rigor for autoethnography: subjectivity, self-reflexivity, resonance, credibility, and contribution, which may assist a doctoral scholar in the articulation of the justification for use of autoethnography for doctoral-level research.

When a doctoral scholar embarks on the use of self-as-subject to consider a past lived experience, memory serves as an archive of experience. It is important then for the doctoral researcher to consider whether data are memory or memory is used for interpretation as Bochner (2016) said, specific attention must be paid by autoethnography to the retelling or recount of the past. Further, this attention must also focus on the two aspects of autoethnography: memory work and story-making (Bochner, 2018). This is an important distinction for the doctoral researcher and one where a decisive approach must be determined as to whether a *fictive* story (one where the self is depicted in a drama) will be used for representation of data (Denshire, 2014) or whether a more systematic traditional approach will be used to qualitatively depict patterns and processes from the data gathered (Ellis et al., 2011). This decision then determines the use of memory as a factual retelling of a past event or memory more as a vehicle of the imaginative (Bochner, 2007, 2017; Richardson, 2000a). For the doctoral scholar, this can be a critical choice and certainly not limited to fact or fiction, but the many genres and subgenres within the literary arts and narrative storytelling including poetics, personal narrative, or creative nonfiction. In addition, Denshire (2014) advised that when assembling this distinction, the point of view should also be considered as first-person pronouns can create excessive attachment to self, insert unnecessary bias, or lean toward a singular reliance on memory especially for doctoral self-as-subject research. Or as Bochner (2007) concluded, whether factual or fictive, these narratives are constructed and interpreted from the memories of the past, not found; yet, the engagement with memory serves as a form of inquiry.

While authors continue to debate across disciplines whose, what, which, or how autoethnography could or should be used as a qualitative research design within doctoral research (Ellis et al., 2011; Stahlke Wall, 2016; Wall, 2006, 2008; Winkler, 2017), it remains a viable choice appropriate for doctoral-level inquiry when approached with fidelity and researcher responsibility as would be done for any doctoral qualitative study including informed consent of ancillary or auxiliary participants (Tolich, 2010). Like others, Hamdan (2012) argued for the placement of autoethnography as a form of autobiographical narrative, which may serve identity construction for the autoethnographer with immense value for the reader. This view of the lived experience of another then may merit autoethnography as a valued research method within doctoral educational research to offer internal views of a lived construct or phenomenon of inquiry (Drechsler et al., 2012; Hamdan, 2012). The diversity and use of autoethnography may also facilitate a transformative experience or transformative learning that then allows for enhanced doctoral researcher positionality concurrent with new knowledge for the discipline (Custer, 2014; Qutoshi, 2015; Throne & Bourke, 2019). Finally, it is essential for the doctoral researcher to design an autoethnography that not only meets rigor of design, but ethical assurances for others within the custom requirements of the degree program, institution, and any state, federal, or international guidelines for human subject protections.

Heuristic inquiry begins with a research problem as a significant human experience or phenomenon of the lived experience, such as a personal challenge, trauma, or evocative event, for which the doctoral investigator seeks deeper meaning, illumination, or in short, an answer or new knowledge through use of

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the inquiry (Douglass & Moustakas, 1985; Moustakas, 1990). Moustakas (1990) stressed the vital importance of entering into this research focus “fully,” which requires an unwavering attention and interest” into the phenomenon or construct of the inquiry (p. 11). This may involve intuition, sense, perceptions, experiences and the like, but an internal self-awareness of a concern that requires further elucidation (Moustakas, 1990); or as Hiles (2001, 2002, 2008) has referred to this internal frame of reference as “heuristic indwelling.” It is through this systematic design that Moustakas (1990) purported a disciplined heuristic process can lead to not only better understand the lived experience, trauma, or emotion, but to achieve great insight into this research focus. While the process for some researchers may be peaceful and insightful, it may likely feel jarring and disturbing for others as much as a river undercurrent can be unexpected and distressful to experience (Moustakas, 1990). These deep insights, however uncomfortable, may also allow the researcher-participant to gain greater awareness or insights of the experience, construct, or phenomenon in others to enhance meaning (Ikiugu, 2012) or as Douglass and Moustakas (1985) referred “to discover and disclose that which is, as it is” (p. 42).

The HI process begins with the identification of the research focus articulated as a research problem or question and then pursued through a six-phase process of self-inquiry: (a) initial engagement, (b) immersion, (c) incubation, (d) illumination, (e) explication, and (f) creative synthesis (Douglass & Moustakas, 1985; Moustakas, 1990). Etherington (2004) noted the *heurism* of these phases as necessary to conduct systematic rigorous empirical inquiry and while the research design can be difficult to encounter, it can also be very rewarding for the self-as-subject researcher and stressed the importance of reflexivity within the HI progression and even after the HI study is complete. Similarly, Brisola and Cury (2016) stressed the need for reflection and self-discovery as these aspects may likely allow a doctoral researcher to view research in new or innovative ways.

Unlike the scientific method, HI allows the researcher to unearth and reveal what exists rather than presupposition of experimental outcomes, and Douglass and Moustakas (1985) also stressed the rigorous analysis is what allows for the empirical study of the subjective data gathered from the self-as-subject. As described in Chapter 1, for the doctoral researcher-participant, the journey into this heuristic self-search and focus can also serve to develop and strengthen agency as well as clarity of researcher positionality for the new doctoral investigator (Throne, 2012; Throne & Bourke, 2019; Throne & Oddi, 2019).

In a doctoral research adaption of HI, Sela-Smith (2002) offered an often-cited critique of HI following the author’s own heuristic research study where Moustakas’ HI was utilized and referred to the interiority gained through the process that allows the researcher to realize the connectivity between self and others as grounded within the theoretical and philosophical literature of self-transformation. Thus, Sela-Smith (2002) formulated an adapted version of HI coined Heuristic Self-Search Inquiry (HSSI), which is an alternative form of HI often used by doctoral researchers within psychology as some have noted it offers a clearer and more distinguishable path to the externality of meaning not only for self but others and society. Sela-Smith (2002) described this necessity of ensuring a path to the external in a heuristic research design:

*As we become conscious of the last frontier, the interiority of the self as experienced by the self, we may learn how to consciously transform both the internal experience and the outside world. (p. 86)*

For doctoral scholars who utilize HSSI, it is important to distinguish Sela-Smith’s (2002) adaptation of Moustakas’ HI discussed in this chapter, as it incorporates three necessary internal-to-external qualities. For if tacit knowledge is to be fundamentally tapped through the process of HSSI, then there must



be acknowledgement and recognition of (a) the value of self-search inquiry, (b) resistance to feeling an internal reconnection, and (c) surrender to the possibilities of transformation (Sela-Smith, 2002). As the author concluded, “I know that if I want what I experience in my outer world to change, I must search internally to discover what caused me to create the external experience” (pp. 85-86); although, the author noted surrender may be difficult if there is no underlying trauma or crises to prompt the inquiry or the researcher may not seek the internal essence of the experience and thereby leave the focus more externally unless drawn inward through the research process and further said:

*I suspect that if there is a crisis in a person’s life that needs to be answered, the researcher is likely experiencing an unknown. The investigator will more likely respond to the portion of the method that deals with surrender, jumping into the river, the darkness, and the unknown because the crisis disrupts structures and the “known” has no answers. (p. 81)*

Subsequently, Ozertugrul (2015) utilized HSSI in the author’s doctoral heuristic study and examined a comparison between HSSI and the construct of self-knowledge. The author later countered the purported superiority of HSSI as an “unwarranted notion,” but agreed HSSI offers a richer value for a self-as-subject study to inform others and society and called for further understanding of HSSI as method especially for those who incorporate others in a self-as-subject study (Ozertugrul, 2017a, p. 247). Or as Ozertugrul (2017b) characterized it, “...the unique positioning of self-search. In standard qualitative research, the data is out there; in HSSI, the data is in the researcher” (p. 223).

There exists a stark contrast in the amount of current research into and using HI when compared with the many forms of autoethnography that have emerged over a similar period as presented in the prior chapter. Yet, this chapter presents current research insights into the appropriate selection of HI and/or its adaptations as an overall research design appropriate for rigorous doctoral-level inquiry in the context of the extant literature. The negotiation between doctoral researcher and research supervisor for the acceptance of this research approach, the institutional and external ethical assurances needed, and various frameworks often utilized with heuristic research the doctoral level are also highlighted. As Sultan (2018) noted, while both autoethnography and heuristic research focus on the essential meaning of the experience of the self, heuristic research is parallel to a labyrinth whereby the micro is the macro and the heuristic researcher returns again and again to the center of the labyrinth to better understand not only internal self but the external including others and society. The current doctoral research presented in this chapter has utilized a heuristic research design or adapted HI to blend with other research approaches within doctoral research to serve as current examples for doctoral scholars who may consider use of HI for a doctoral research study.

When a doctoral researcher selects HI, HSSI, or autoethnography as a research design for the doctoral study, it is more than likely the doctoral researcher has a personal or lived experience one desires to explore as a construct or phenomenon of focus for the inquiry (Etherington, 2004; Douglass & Moustakas, 1985; Ellis & Bochner, 2000; Sela-Smith, 2002). In heuristic research, this phenomenon likely requires a form of self-examination and the doctoral researcher may desire to attain a deep, personal, and contextualized internal meaning of the phenomenon: “to get inside the question, become one with it” (Moustakas, 1990, p. 15). For autoethnography, the doctoral researcher’s motivation may differ somewhat, but more than likely the researcher also has a personal or lived experience related to the study phenomenon and may desire to explore the phenomenon from a self-as-subject stance or dive more deeply into the experience. Or as Adams and Holman Jones (2011) described autoethnography as a means to

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tell stories from the multiple selves within as an “insurrectionary act” to disrupt the conscious reality of the researcher-participant when these intrinsic stories are brought to light (p. 111), or Durham’s (2017) description of the autoethnographer as “narrative archaeologist” as the researcher-participant unearths the ordinary and the past (p. 23).

Regardless of the initial motivation, data collection procedures for a doctoral study are likely to be presented in advance of the study and even more likely will require approval by a research supervisor or other academic evaluator. Thus, the methods for data collection in self-as-subject research must be presented as rigorous, systematic, and often meet institutional requirements for appropriate data collection for the research focus and the discipline. In addition, doctoral researchers who utilize these methods for doctoral research may be required to demonstrate mastery of the paradigmatic perspectives, tenets, and philosophical perspectives that serve as the foundation and justification for use of these research approaches to ensure the choices are fully supported by this contextual mastery (Etherington, 2004; Kumar, 2017; Sell, 2017).

Some researchers have described data collection for the researcher-participant who chooses autoethnography as ideal to gather data from everyday experiences that other methods may not be able to capture as well as to allow these insights to be shared externally with a larger audience and audiences outside of academia (Adams, Ellis, & Jones, 2017). Still others have noted data are gathered during generative writing phases and used for later reflection, and yet others, such as for HI, have noted these procedures must be aligned with systematic phases whereby data are gathered and considered to ensure meaningful depiction of the phenomenon of the inquiry (Douglass & Moustakas, 1985; Moustakas, 1990). In any case, procedures for data collection for self-as-subject research at the doctoral level can be a challenge to articulate due to the liminality and nuance between data collection and data analysis. More importantly, the delineation between data collection and analysis in self-as-subject research can also be blurred as analysis may commence within data collection and can be further complicated by researcher-participant observations of self during these research phases (Gorichanaz, 2017) whereas in more conventional methods of research of human subjects at the doctoral level, data collection is closed prior to analyses, which allows systematic steps to be articulated within a doctoral research proposal. Further, institutional review boards or other institutional research oversight committees may require a clear data collection closure procedure prior to data analysis, which may complicate the process for new investigators who seek authentic and uninterrupted continuous processes for self-as-subject research. In either case, it is possible for doctoral researchers to gather data aligned with HI or autoethnography and concurrently meet the expectations of the doctoral program or institution.

Thus, the realities of doctoral level research likely require a systematic method of data collection be articulated prior to the approval of the study; however, many doctoral and other past researchers were able to utilize the subtle intuitive aspects of data collection for self-as-subject research in spite of institutional or programmatic constraints from a more traditional research perspective. These examples of what and how past doctoral researchers have navigated HI and autoethnography can be valuable to new doctoral researchers who see these delineations as barriers to the necessary approvals to conduct self-as-subject research for a supervised culminating doctoral study. However open-ended the components of the doctoral study design may be, the examples of doctoral level HI and autoethnography, as well as guidance from current self-as-subject researchers, in this chapter illustrate how data collection methods for HI and autoethnography can be demonstrated as systematic, rigorous, or disciplined, and the personal involvement with the data. Further, the examples highlight how the elucidation of new findings can occur or inform the larger sociocultural or other contexts. In this chapter, various data and innovative collec-

tion methods for both HI and autoethnography are presented and explored to illustrate these multiple modes and adaptations as well as the types of data sources appropriate for HI and autoethnographic data collection in doctoral research.

Self-as-subject research relies on a fundamental assumption of knowledge as discoverable via narrative and the individual lived experience as well as narrative truth is existent among textual data that may not be readily apparent without deep and iterative introspection. Thus, data representation, which may be referred to as presentation of findings in postpositivist research methods, in self-as-subject research varies widely and is often quite different from the results section or chapters of reports of more traditional qualitative doctoral research studies where themes may be serially reported in tabular format and characterized by direct quote excerpts. Conventional approaches to “data vis-à-vis collection, analysis, and interpretation “works well in standard research where data can be checked through conventional validity measures (internal validity, external validity, reliability, replicability, and objectivity). It does not work well in heuristic self-search inquiry (HSSI) method where the data are in the researcher” (Ozertugrul 2017a, p. 237). Likewise, Ellis, Adams, and Bochner (2011) noted forms of autoethnography differ between studies of solely self and studies that involve others, whether or not traditional analyses are employed, and the power relationships existent among self and others. In addition, study design for autoethnographies by collaborators may differ from those designed for an exploration of self (Ellis et al., 2011). As generalizability, and often even transferability, are not expected within the lived experience when the sole goal may be to uncover insights or self-knowledge of the trauma or experience solely for the researcher-participant. Sometimes, it is only much later that a doctoral researcher also recognizes the relevance of individual findings to others with similar experience with the trauma or phenomenon (Ozertugrul, 2017a, 2017b).

Within doctoral research, for both HI and autoethnography, the researcher-participant must likely defend the approach to the study design components and articulate a credible case for not only to how the data are to be generated, gathered, or assembled, but for how and when analyses will occur and even what form the representation of findings may take prior to conducting the doctoral research study. In HI, this can be challenging as the intention of the creative synthesis is to let this aspect emerge organically following a deep and iterative dive among the first five prior phases and the researcher-participant may be unaware of the form of data representation and interpretation to be employed until after this analysis is conducted (Freinkel, 2015; Lake, 2015; Norton, 2017). Fortunately, this can be remedied by a clear and arguably sound approach that leaves the more ambiguous components well justified by current research guides that support the open-ended approach to the self-as-subject inquiry and a knowledgeable doctoral research supervisor who may possess experience and agency for self-as-subject research (Ings, 2015; Kidd & Finlayson, 2015). As Haertl (2014) stressed, “A comprehensive presentation of heuristic research necessitates reflection on the process and the importance of the stages as outlined by Moustakas” (p. 66); thus, a doctoral researcher may need to argue for the presentation of stages within data analysis to fully represent the data as aligned with the heuristic approach. As Le Roux (2017) recommended for either evocative or analytic autoethnography,

*Any appraisal of autoethnographies should be subject to individual judgement based on insight and experience. Competent researchers and appraisers of research must acquire not only the ability to use and understand the application of various research skills but also the acumen to judge when some kinds of research are likely to prove more productive and germane than others. (p. 204)*

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As Ellis and Bochner (2000) stated, and holds true for doctoral education in the current decade, a case can be made to appropriately justify self-as-subject research while work remains to wean scholars from objective measurable and comparative outcomes as the sole method by which to conduct research to discover new knowledge, or perhaps as Douglass and Moustakas argued, “The power of heuristic inquiry lies in its potential for disclosing truth” (p. 40). Thus, this discoverable and manifested truth through the personal lived experience of the individual awaits doctoral researchers across disciplines who desire to use these self-as-subject methods for a relevant and appropriate scholarly inquiry to achieve the terminal degree across various disciplines.

Many institutions and doctoral research supervisors support and ease the acceptance for data representation as creative products, such as those from literary or visual art, that can be produced through use of these methods as representations of doctoral research findings and still others may require an academic explication of the creative outcome to situate the work within the scholarly literature, a format often borrowed within other qualitative methods where artistic or visual representations of findings are desired (Coulson & Valentine, 2014; Freinkel, 2015). In either scenario, these representations as holistic interpretations of the insights and layered meaning attained through self-as-subject research offer valuable contributions to the scholarship and in many cases, professional practice. Swinton (2017) noted how researchers can stumble upon these discoveries by exploring literature surrounding a phenomenon within itself and succinctly summarized these layered complexities of discovery:

*I discovered there was something to intuit about my own personal experience that needed to become known and opened up areas of my experience that I had taken for granted or not really engaged with in any significant way. There was a great deal of selfdiscovery, making connections to childhood experiences and aspects of cultural influences that had hitherto been out of my conscious awareness. The research was a journey of discovery, bringing to the fore things that I did not consciously realise about myself, the culture from which I came and my understanding of the spiritual heritage from my African ancestry. (p. 13)*

In the subsequent chapters, discussions of the development of personal and organizational agency has also been seen with these self-as-subject research methods (Coulson & Valentine, 2014; Norton, 2017). Doctoral research studies are used to illustrate the various options for data collection, analysis, and data representation used in doctoral research; however, only examples disseminated within the peer-reviewed scholarship are used to ensure these studies have undergone rigorous review outside of the respective institution. Each chapter provides various examples from doctoral research published in peer-reviewed scholarly journals that utilized autoethnography, HI, or combined forms to highlight how and why doctoral researchers can demonstrate insights and new knowledge gained from the lived experience of the phenomenon, self-inquiry, deep introspection, and self-as-subject research that also involves other participants or archival data from others.

## **CONCLUSION**

Regardless of the mode of inquiry undertaken, self-as-subject research challenges the traditional assumptions held within doctoral education for new knowledge discoverable within the lived experience of one individual. The illustrations offered in the subsequent chapters in this guide are from published doctoral

research within scholarly journals to highlight the flexibility, adaptivity, and usage of two methods to conduct empirical research into the lived experience of the self. Whether a doctoral researcher selects HI, HSSI, or autoethnography as a research design for the doctoral study, it is important that the doctoral researcher is ready and prepared to embark upon an iterative internal exploration of the lived construct as the focus for the inquiry as much as whether the researcher decides to gather data from others to attain new knowledge about the phenomenon or construct of focus for the study. The deep dive into the introspection necessary for these methods can be daunting for new doctoral researchers; thus, a quality relationship is necessary with an experienced research supervisor well versed within self-as-subject research methods can be helpful, if not vital, to the process. It remains the goal of this guide to inform the contemporary doctoral researcher as to whether self-as-subject research methods are appropriate to best explore the phenomenon of the inquiry and to illustrate the unique and diverse models that can be employed for data collection, data analysis, and the interpretation and representation of study findings through the examination of self.

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## **KEY TERMS AND DEFINITIONS**

**Doctoral Scholar Agency:** A belief in a doctoral scholar's own ability to take the initiative necessary to assume an active role in one's own learning setting, content, process, and engagement.

**Research Supervisor:** Supervisors of doctoral research carry various common titles across international doctoral education including doctoral research mentor, chair, advisor, or supervisor.

**Research Supervisor Agency:** Research supervisor agency is comprised of the supervisor's efficacy, a strong mentoring ethos, healthy and diverse communication style, empathy, and non-hierarchical relational trust between the research supervisor and graduate student researcher. Agency can also be influenced by the graduate research community and academic environment in which the research is conducted.

**Self-as-Subject Research:** Self-as-subject research involves an empirical research study to explore the self as the study participant. Autoethnography and heuristic inquiry are research approaches designed to explore a study phenomenon from the perspective of the self.

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## Chapter 9

# Autoethnography and Other Self–Inquiry Methods for Practice– Based Doctoral Research

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### ABSTRACT

*For some doctoral practitioner-researchers, the methods used within autoethnography and other self-inquiry-based research methods are appropriate for a practitioner dissertation as the phenomenon of inquiry is a central human, intrinsic, and experiential self-focused construct. The tenets of autoethnography and other self-as-subject research support the view that new knowledge can be discoverable from within the individual lived experience, and this chapter presents current trends and scholarship for the use of autoethnography and other self-inquiry research methods for practice-based doctoral research. The chapter also presents one case from a recent doctoral autoethnographer to illustrate the experience of a practice-based autoethnographic dissertation study within a practitioner doctoral program.*

### INTRODUCTION

More and more practitioner doctoral programs allow for qualitative autoethnography as a specific research approach for dissertation research. In autoethnography, new knowledge is discoverable from the individual lived experience and as a research design, autoethnography may offer societal implications to enhance the meaning of the phenomenon or lead to further insights that may inform others' experiences (Ellis,

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Adams, & Bochner, 2011). In the use of self-inquiry research methods at the doctoral level, the lived experiences of individuals can illuminate an understanding of numerous constructs across disciplines that often lead to new insights for better understanding to inform societal and practice-based problems.

Previously, the authors have noted the need for a more consistent operational definition for research supervisor agency and the personal competencies necessary for a high-mentoring ethos and non-hierarchical doctoral research supervision (Throne & Oddi, 2019; Throne & Walters, 2019). In addition, doctoral research supervision has nuances for practice-based doctorates that often differ from the supervision of research doctorates as these frameworks may allow for specific guidance for practitioner research that may differ from the Ph.D. (Burrington et al., 2020; Perry, 2016; Storey, 2017).

In this chapter, these considerations for the doctoral researcher-research supervisor relationship are considered from the unique perspectives of autoethnography as a practice-based dissertation research design choice. New insights are presented for doctoral research supervisor engagement within online environments for practitioner doctoral programs using self-inquiry research methods. The authors have also previously called for continued collaboration to achieve a consistent framework for quality practitioner dissertation research supervision of autoethnography to allow for individuals to more deeply consider the insights to facilitate further meaning and understandings to improve these aspects of dissertation completion. Thus, the current literature specific to the supervision of practitioner doctoral self-as-subject research is appraised and models to foster effective practitioner research supervision for self-as-subject research methods are presented in the context of deep individual explorations of various phenomena.

Finally, the authors have previously noted practitioner-researcher agency may be enhanced through self-examination and introspection to reduce unequal power relationships and further develop a high mentoring ethos necessary for the doctoral dissertation writer's success and dissertation research completion (Throne & Oddi, 2019). Lewis (2020a) noted autoethnographic research allows for a deeper understanding of the researcher-participant from a specific sociocultural context and to consider the interconnectedness of the individual amidst complex sociocultural settings. This then may lead to an enhanced understanding of a doctoral researcher's positionality and allow for entrance into the academic community as trust is furthered and the dissertation writer is introduced to the research publishing community (Throne & Bourke, 2019).

Thus, this chapter seeks to illuminate these opportunities from the individual experience and bridge to the collaborative insights gained from the other. The chapter also presents a case from one doctoral autoethnographer to illustrate the experience of a practice-based autoethnographic dissertation study within a practitioner doctoral program (Lewis, 2020a). The elucidation of the insights gained from self-inquiry may further enhance the facilitation of the researcher's development into a new investigator and scholarly writer (Throne, 2019). When successful, the research supervisor may positively influence the practitioner dissertation writer's journey of self-inquiry of a specific construct from the periphery of the doctoral learning community and bring them to the center of academic life, a continued research agenda, and continued research and scholarly publication post-doctorate. This chapter presents the use of autoethnography and other self-as-subject research methods within practitioner doctoral programs from these multiple perspectives and benefits. Specific recommendations from the current scholarship are discussed along with the calls for continued research into the use of autoethnography and other self-inquiry methods for doctoral research.

## **BACKGROUND**

The selection of a self-inquiry method of research for a doctoral dissertation study requires the ability to achieve a level of vulnerability that differs from doctoral research of others. When a practitioner doctoral scholar embarks upon self-as-subject inquiry, it may require additional fortitude as the scholar intentionally focuses on a construct from the profession or practice, which may expose multiple layers of identity through the introspection self-inquiry research necessitates. Eisenbach (2016) noted the inherent tensions found within an autoethnographic study that may not first be recognized by a new researcher and the unexpected tension of “inadvertent self-denial,” which may surface unexpectedly (p. 605). As a practitioner educator turned professor, Eisenbach (2016) stressed the immense vulnerability found in autoethnographic work when one delves into the multiple selves that layer one’s identity as an educator. Likewise, Goodall, Huggins, Webber, and Wickett (2017) emphasized the importance of critical reflection in self-inquiry, a valuable introspective process that may continue to serve the practitioner-researcher post-doctorate.

Trends have continued over the past decade in higher education whereby the practitioner doctoral program culminates in new designs for dissertation research that are more practice-oriented and industry-specific (Berg, 2019; Perry, 2016; Storey, 2017), which parallels trends over the same period toward the increase in the use of self-as-subject research approaches for dissertation research. In addition to the importance for a doctoral scholar to understand the distinct landscape of self-inquiry research approaches over other qualitative methods that involve data collection of study participants beyond the self, the doctoral researcher must also ensure the dissertation research supervisor and committee members understand the selection of autoethnography or a similar method is the best research approach to explore the study construct(s). Villeneuve et al. (2020) noted the importance of a non-hierarchical approach to interdisciplinary collaborative autoethnography and the same lateral style may be said for the relationship between the doctoral researcher and research supervisor when autoethnography or another form of self-inquiry research has been selected for the dissertation study. Duffy et al. (2019) stressed the need for empathy and trust in the scholar-supervisor relationship. This trust may necessitate introspection by both the doctoral scholar and research supervisor when autoethnography or another form of self-inquiry research is considered for the dissertation study.

## **SELF-INQUIRY RESEARCH METHODS FOR THE PRACTICE-BASED DISSERTATION**

Autoethnography and other self-inquiry research methods emerged from the branch of narrative inquiry within qualitative methods, emergent from the interpretivist/naturalist paradigmatic perspectives of the individual lived experience, during the late 1980s and into the 1990s (see Figure 1). Due to the many forms and approaches to autoethnography and other self-as-subject research designs, such as Moustakas’ (1990) heuristic inquiry, it is especially important for doctoral scholars to establish *whose* and *which* method or design, or combination of methods and designs, will be used for dissertation research as the purpose and intention vary between specific approaches (Throne, 2019; Winkler, 2017). This can be especially essential for a practice-based dissertation in consultation with the dissertation research supervisor to ensure alignment between the rationale for the choice of qualitative autoethnography and the research focus. Perhaps more importantly, this consultation must also assure the support of the research

supervisor in the choice of a self-inquiry design for dissertation research. Winkler (2017) referred to the “minefield” that can occur for doctoral researchers who choose to use a self-inquiry research method, and others have noted the additional challenges faced when the dissertation committee does not accept the method selection for dissertation research (Mertkan & Bayrakli, 2018). Further, the research supervisor’s guidance and experience with self-inquiry methods are also often necessary to guide doctoral students through the use of autoethnography and other forms of self-as-subject research to ensure the necessary rigor and veracity of the work (Le Roux, 2017). It may also require this experienced mentoring for the doctoral scholar to understand and articulate the implications for society and practice of the results of an autoethnographic study.

*Figure 1. Interpretivist Qualitative Research Methods of the Lived Experience*

<b>Interpretivist/ Naturalist Paradigm</b>	Ethnography
	Grounded Theory
	Phenomenology
	<b>Narrative Inquiry</b>
	Autoethnography
	Heuristic Inquiry
	Other Self-Inquiry Research Methods

However, despite many successful autoethnographic dissertation research studies, the resistance to the use of self-as-subject research methods for dissertation research and divergence over autoethnographic approaches has been well documented (Stahlke Wall, 2018) and the choice to use self-as-subject research methods may be even more difficult within disciplines that historically have not had strong use of qualitative inquiry (Kinnear & Ruggunan, 2019). Yet despite these challenges, autoethnography remains a valuable research approach to the discovery of the socially-constructed lived experience of the individual and provides the opportunity to identify hidden tensions that may inform others’ experiences (Eisenbach, 2016). In addition, the insider/outsider experience of the scholar-practitioner is often embedded within practitioner doctoral programs, and autoethnography can provide a direct link between the multiple identities of the doctoral scholar, professional practitioner, and the other selves of the scholar-practitioner for direct experience with the study construct or phenomenon (Goodall et al., 2017). Further, insights gained from self-inquiry research can be valuable to explore how the researcher’s identity influences or is integral to knowledge production in the discipline and practice (Kinnear & Ruggunan, 2019; Mertkan & Bayrakli, 2018).

Through autoethnography, the doctoral researcher is afforded the ability to concurrently explore the duality of identities, insights into the practice-based problem from a scholar-practitioner perspective, and bring new perspectives to the scholarship from an evolving researcher positionality throughout the dissertation journey. For example, demographic characteristics that may serve as variables in a quantitative study (such as race, gender, or socioeconomic status) are examined reflexively within autoethnography from an introspective examination by the practitioner turned doctoral scholar thereby yielding new knowledge for the practice-based problem directly from the insider/outsider experience (Kinnear & Ruggunan, 2019; Throne, 2019). In short, “an autoethnographic approach enables a first-person narrative of interweaving theory and lived experiences to present different ways of knowing that may not be readily available or accessible, on topics that may be perceived as taboo (e.g., anger, ableism, racism, mental illness, or sexual abuse)” (Pearson & Boskovich, 2019, p. 8). However, tackling these challenging constructs from the perspective of self may be no easy feat for a new researcher and often requires the veteran guidance of a doctoral research supervisor experienced in the use of self-as-subject inquiry.

For example, Turner (2107) noted the heightened level of reflexivity gained through autoethnography as well as the evolution of multiple identities throughout data analysis. Reflexivity fostered a better understanding of the relative and contextual meaning of the experience as well as researcher identity(ies).

*The lines I had previously drawn to divide my personal and professional / facilitator and performer selves began to blur and fade. Instead, I began to explore lines that connected these selves and reached out to others, crossing back and forth, and forming an elaborate weave...The implications of this research on my own practice were deep, wide, and varied. (Turner, 2017, p. 3)*

Likewise, Mertkan and Bayrakli (2018) stressed ongoing “identity making” is essential to the doctoral scholar who embarks upon autoethnography (p. 322) and early introduction to qualitative methods can be helpful to this selection of research approach. This is further illustrated in the following case of a doctoral scholar who utilized autoethnography within a practitioner doctoral program.

## **Finding Voice as a First-Time Doctoral Autoethnographer**

Similar to any other methodology selection, researchers using autoethnography face various challenges. While previous research has thoroughly explored the ethical issues, obstacles, and problems surrounding autoethnography as a methodology (Chang, 2016; Ellis, 2007; Forber-Pratt, 2015; Hernandez & Ngunjiri, 2013), less research has examined the challenges of those using autoethnography. However, some challenges of using autoethnography have been identified by Chang (2016), Forber-Pratt (2015), Jones et al. (2016), Pelias (2013), and Winkler (2017). Consequently, thematic challenges have been identified as understanding how to do autoethnography, finding a voice as an autoethnographer, how and to what extent autoethnography can be done collaboratively, which type of autoethnography is better: evocative or analytic, navigating and or negotiating higher education institutions’ policies and procedures, and whether or not autoethnographers are self-indulgent and or narcissistic in their narratives (Chang, 2016; Forber-Pratt, 2015; Winkler, 2017). This section presents four major challenges experienced by the author as she went through the dissertation process as a doctoral candidate. Her specific challenges included but were not limited to finding her voice as a first time autoethnographer, navigating institutional policies and procedures, addressing validity trepidations surrounding autoethnography, and feeling exposed as a result of using this method.

Autoethnography is a diverse methodology and as such, Winkler (2017) warns “newcomers and experienced researchers may constitute difficulties in understanding what autoethnography could be or should be,” (p. 244). Autoethnography is complicated; autoethnographers are reminded not to rely solely on memory as data, keep field notes, journal, or use a diary but also to avoid being over-indulgent or narcissistic (Chang, 2016; Pelias, 2017; Winkler, 2017). Finding a voice as an autoethnographer means capturing both inner and outer dialogues throughout the process, understanding events and relationships, and articulating these experiences and how they’re tied to a single, or in this case, multiple other larger cultures.

After reviewing many methodological approaches, the author determined autoethnography to be an appropriate research design for her doctoral dissertation, to provide information about the human side of an issue and to uncover the personal experiences of the researcher concerning the study phenomenon (Merriam & Tisdell, 2016). These experiences were then connected to a larger cultural or social group (Chang, 2016; Merriam & Tisdell, 2016). However, as a first-time autoethnographer, it was challenging for the author to know where to start, to find her voice, and to feel confident throughout the process.

**“Where do I begin and how exactly do I actually do autoethnography?”**

Before embarking on a self-as-subject autoethnographical study, doctoral researchers must distinguish, understand, and articulate their own researcher positionality (Throne et al., 2018; Throne, 2019). Researcher positionality describes both the researcher’s worldview and also the position they have chosen or has been pre-determined for them in the proposed and specific research (Savin-Baden & Howell Major, 2013; Throne, 2019). For the author’s autoethnographic dissertation study, the doctoral researcher’s positionality stemmed from the lens of a postmodernist view. Researchers who view autoethnography from a postmodernist lens utilize an evocative, narrative form of autoethnography. From a postmodernist’s lens, autoethnography “shows struggle, passion, embodied life, and the collaborative creation of sense-making in situations in which people have to cope with dire circumstances and loss of meaning” (Ellis & Bochner, 2006, p. 433). The researcher’s lens was that of a female, military spouse doctoral student. The researcher’s pre-determined position for this study is that of an insider within the military lifestyle and more specifically, the military spouse culture and the researcher’s positionality as a cultural insider in a doctoral higher education program. These lenses may have influenced the research process and the explanations that emerge from the study as the researcher has been an insider to military culture and the military spouse lifestyle as well as an insider in the higher education institution.

**“Set aside time each day to just write.”**

The author’s dissertation chair gave her the above advice, which greatly helped the author in finding her voice as a novice autoethnographer. By setting aside time every day to generate data via narrative, the author was able to get into a flow of narrative data generation and thus, became more comfortable with autoethnography as a method. It was helpful for the author to review documents and recall memories surrounding life events, especially military-mandated moves, thinking about those experiences, and relating them to larger cultures: the military culture, the military spouse culture, and the culture of the author’s higher education institution. As Ellis (2004) explained:



*Back and forth auto-ethnographers gaze. First, they look through an ethnographic wide angle lens, focusing outward on social and cultural aspects of their personal experience and then they look inward, exposing a vulnerable self that is moved by and may move through, refract, and resist cultural interpretations. (p. 37)*

Finding a voice as an autoethnographer took time for the author and remains a work in progress. Developing strong skills as an autoethnographer does not happen overnight. It is only with practice, reflexivity, and dedication that these skills are sharpened and developed. Further, the relationships with each of the author's initial dissertation chair, and subsequent chairs, positively impacted the author's persistence as a doctoral student. The main determinants of doctoral student persistence and doctoral dissertation completion have emphasized a positive dissertation mentor/doctoral scholar relationship including traits such as honesty, effective communication skills, and trust (Throne et al., 2015; Throne & Duffy, 2016). These traits were present with both of the author's dissertation committee chairs. While the mentorship and experiences were different with each chair, the author felt supported as a scholar new to autoethnography and this helped her find her voice and feel confident about her choice in selecting the method.

## **Navigating Doctoral Institutional Policies And Procedures**

The author faced another challenge of using autoethnography for her dissertation, which was navigating university policies and procedures while simultaneously employing self-advocacy, explaining what autoethnography was, and marketing it as a valuable and appropriate method. This challenge was also documented in Forber-Pratt's (2015) research outlining her challenges writing an autoethnographic account. As a doctoral student at an academic institution, there were some formalities and procedures from which the author was not exempt. One such procedure was obtaining approval from the Institutional Review Board (IRB) of the author's academic institution.

For the author and most doctoral candidates, a necessary component of the dissertation process is gaining approval from the Institutional Review Board (IRB). The IRB is a committee whose purpose is to monitor, review, and approve or deny research projects that involve human subjects. The main goal of this committee is to ensure researchers follow regulations and behave ethically while conducting their research and collecting data. Additionally, the IRB safeguards participants by making certain no physical or psychological harm comes to them and that they are treated fairly (Forber-Pratt, 2015).

Other autoethnographers have also documented their challenges in gaining IRB approval for autoethnographic research projects. Rambo (2007) chronicled her frustrating challenge of obtaining a green light to use autoethnography and then being rejected by the IRB of her institution. Lincoln and Tierney (2004) documented their difficulties obtaining IRB approval while using unorthodox qualitative methods and Wall (2008) described her difficulty in getting other scholars viewing her autoethnographical work as legitimate and credible. The author experienced this challenge as well. While a doctoral candidate, the author also had to explain to her institution's IRB that she was not recruiting anyone for the study, did not need the consent of any participant (other than the single subject participant), and did not need site-permissions or IRB-equivalent approvals from any department or authority at the research site. After submitting to IRB, the author hoped to not have the same challenges as Rambo (2007). Eventually, the author's IRB request was approved, and her doctoral study continued as planned.

Another navigational component of using autoethnography was repeatedly explaining what autoethnography was and defending it as a valuable and appropriate method. Overall, the recurrent theme in the author's experience as an autoethnographer was easing the confusion of others while trying to remain confident in my decision to use autoethnography. Committee members, advisors, and other professors were confused about what the method was, how it was done, and what value it could add to the body of literature.

## **Validity and Rigor of Autoethnography for Dissertation Research**

The purpose of the author's qualitative autoethnographic dissertation was to explore the lived experiences, particularly the mobility and persistence, of a tied-migrant military spouse student in a doctoral program (Lewis, 2020a). Autoethnography was appropriate to explore the researcher's personal or lived experiences that relate to the study (Chang, 2016). Researchers who wish to develop a deeper understanding of their experience as self-as-subject research often utilize autoethnography as the method as it relies on the lived experience of the individual and is established through narratives (Chang, 2016). The narrative truth is evident in the textual data and may not be apparent without deep self-analysis and introspection (Throne, 2019). Specifically, the author's doctoral study employed evocative autoethnography for narrative data representation (Ellis & Bochner, 2000).

Data collection consisted of generative narratives, archival journal entries, letters photographs, personal notes, field texts, and emails. For the author's doctoral dissertation, Chang's (2016) procedures for autoethnography data analysis and the analysis software, NVivo were used for analyzing collected data (Lewis, 2020a). The single participant and researcher's positionality stemmed from the theoretical lens of a postmodernist view and two frameworks were used: Schlossberg's transition theory and Tinto's theory of student persistence (Lewis, 2020a). While these are all credible and widely utilized theoretical lenses and frameworks, the author was consistently met with criticism and skepticism from administrators, advisors, professors, and other scholars including academic coaches.

**"I've never heard of this methodology; how do you even pronounce it?"**

This question was asked of the author in many iterations and forms throughout the dissertation process. Many professors, advisors, and academics were skeptical of the author's usage of autoethnography and tried to discourage the doctoral candidate author from using this methodology, citing that it wasn't credible, valid, or commonly understood. Faculty members who favored quantitative methods openly criticized the author's usage of autoethnography as a method for her dissertation.

The author's first dissertation chair recommended using autoethnography as a method. The author agreed this method would benefit her purpose and set off reading and researching the method in depth. The dissertation process was going very smoothly until this chair accepted a new position and left the university. The author was then assigned a new chair who was focused on quantitative research and questioned the validity of autoethnography. He posed the following question:

**"What's the difference between autoethnography and some form of self-therapy?"**

The author was astounded to be asked this question by an academic coach at her higher education institution. It was unexpected and hurtful. On some level, the author felt insulted. Doctoral students are

taught to seek help throughout the dissertation process, to ask for guidance, and implement critiques and edits provided by their professors. When the author first began her doctoral dissertation, her first chair suggested autoethnography as one possible method. Halfway through the dissertation process, this chair accepted a position elsewhere and left the academic institution. The author was then assigned a new dissertation chair who was not familiar with the method but put forth an exceptional effort to be open-minded and supportive.

## **Vulnerability of Exposure in Autoethnography**

As Ellis (2004) described, the heart of autoethnography lies in making oneself vulnerable, and exposes the author's intimate thoughts while exposing their strengths and weaknesses. At the very core of autoethnography, is the concept of questioning and revealing the self (Hughes & Pennington, 2017) and autoethnographies consider the interconnectedness of cultural and self-descriptions through history, language, and ethnography (Ellis, 2004). This exposure can open new researchers using autoethnography to the criticism of others that is not always constructive nor beneficial to the growth of the doctoral researcher.

Being a doctoral student has inherent challenges. Being a tied-migrant military spouse doctoral student presents additional challenges to completing a doctoral program (Lewis, 2020b). Exposing these challenges led the author to feel exposed and vulnerable. When the author began her dissertation journey, she did not fully understand how recounting memories and past experiences would bring emotions to the surface. For the author, being an autoethnographer felt like voluntarily sharing her deepest thoughts and most precious or costly memories. This was a bold decision and not an easy option for dissertation research. Therefore, the author felt she needed to prepare herself for her personal life being scrutinized, but also the chance that the military and military spouse communities would criticize her feelings and interpretation of the military lifestyle and culture.

The United States military has its own unique and distinctly defined culture (Barnao, 2018; Meyer et al., 2015; Redmond et al., 2015). Military culture is created and reinforced by various traditions and rituals that are constantly repeated to instill continuous training efforts and to influence the social interactions between military members (Atuel & Castro, 2018; Barnao, 2018). Within the military community, is a sub-culture of military spouses. Military cultural characteristics affect the service members' children and spouses as well. In particular, military spouses become unified include an established hierarchy, stigmatization, and privileges or lack thereof based on rank (Redmond et al., 2015). Overall, understanding the unique language, ranking system, and moral codes unique to one's branch of service is an important aspect of military culture that can impact how a service member and their family fit into the military lifestyle.

The military community and the smaller military spouse community are both very diverse. There is no 'one size fits all' approach or description for either of these communities. Some aspects of the military lifestyle that cause strain for military families are the frequency of PCS moves, type of assignment given to the service member, irregular and or long work schedules, frequency of deployments, time in between deployments, length of military service, rank, fear of war or deployment, and reintegration after a deployment (Hisnanick & Little, 2015; Russo & Fallen, 2015; Ott et al., 2018). While any of these factors individually could cause strain or stress, combined, these aspects of the military lifestyle can put families at risk for falling into crisis (Russo & Fallen, 2015).

After the author's autoethnographic research was complete, the author felt exposed to the criticism and scrutiny of not only academia but the military and military spouse communities as well. The mil-

itary-affiliated student population is complex (Ford & Vignare, 2015), and the military spouse student population is as well (Bonura & Lovald, 2015; Shaler et al., 2018). A fellow military spouse listened to the author as she explained her experiences throughout the dissertation process, the method of autoethnography, and provided an in-depth explanation of her dissertation topic: tied-migration of military spouses and their academic persistence. The military spouse commented defensively: “Well, that’s not the experience for all us military spouses, you know?”

As Chang (2016) asserted, autoethnography is appropriate to explore cultures because “self is considered a carrier of culture, intimately connected to others in society, the self’s behaviors—verbal and nonverbal—should be interpreted in their cultural context” (p. 125). As an outsider doctoral autoethnographer and an insider to the military and military spouse cultures, the author understood that not all military spouse students have the same or even similar experiences and only shared her experiences within the culture through utilizing autoethnography. However, the author’s feelings of exposure and the anxiety over the possibility of her doctoral work being misunderstood or misinterpreted by the overarching military community and military spouse communities were impactful. Yet, while daunting, this feeling has been reported as common among new and veteran autoethnographers. Similar to scholars using any other methodology, doctoral researchers who choose to utilize autoethnography also face challenges. This section presented four specific challenges the author experienced while using autoethnography as the method for her doctoral dissertation. These challenges included but were not limited to: (a) finding her voice as a first-time doctoral autoethnographer, (b) navigating university policies and procedures, (c) addressing validity trepidation surrounding autoethnography, and (d) feeling exposed by multiple communities as a result of using this method. After the author’s autoethnographic research was complete, the author felt exposed to the criticism and scrutiny of not only academia but the military and military spouse communities as well.

## **FUTURE RESEARCH AND PRACTICE DIRECTIONS**

Recent doctoral researchers who utilized autoethnography or other forms of self-as-subject research methods have called for inquiry into the use of these methods within doctoral education. For example, Winkler (2017) called for researchers to consider the “multiplicity” of autoethnography and not to regard the method as solitary but as a diverse, multi-faceted field of self-inquiry methods due to the varied definitions and recommended approaches used within autoethnography (p. 244). Forber-Pratt (2015) also encouraged doctoral researchers and their research supervisors to ensure the autoethnography is well grounded within the methodology and theoretical foundation appropriate for doctoral-level research. In addition, the author called for more investigation by Institutional Review Boards in the consideration of autoethnography as exempt or not within IRB purview when no other human subjects are involved. However, issues of privacy and confidentiality of others noted within the narratives of the autoethnography need assurance, which may require IRB review to ensure new researchers understand these privacy needs for others they may reference within their individual experience. Similarly, Le Roux (2017) stressed,

*Competent researchers and appraisers of research must acquire not only the ability to use and understand the application of various research skills but also the acumen to judge when some kinds of research are likely to prove more productive and germane than others...Strategies for the assessment and assurance of the rigour of autoethnographic research should accommodate both the application of genre specific*

*assessment criteria as outlined in this study and the use of sound academic judgment and insight of the individual reviewer. (p. 204)*

Further, Eisenbach (2016) noted the inherent vulnerability aspects involved with autoethnographic methods may only be realized by new researchers in hindsight and thus, doctoral research supervisors need to ensure these considerations are discussed with the doctoral researcher early on to better prepare them for a dissertation journey that involves such deep introspection.

Many past researchers have also noted the use of duoethnography, collaborative autoethnography, and other forms of self-as-subject research as a means to support doctoral researchers throughout their dissertation process, even when the use of these methods may not be the dissertation research method. For example, Kinnear and Ruggunan (2019) encouraged management scholars to utilize duoethnographic collaboration to foster reflexivity and other critical reflection throughout management research and Turner (2017) highlighted the faculties for reflexivity may be expanded by the use of autoethnography. In addition, Mertkan and Bayrakli (2018) suggested the early introduction of various types of qualitative research by research supervisors may expand new doctoral researcher views of the opportunities, inside and outside the dissertation research process, from various paradigmatic approaches. In their work with disability research, Pearson and Boskovich (2019) also noted the need to support new doctoral researchers early on in the decisions for the layers of self-disclosure and critical reflection of the lived experience to discover insights and new knowledge with implications for the study construct or phenomenon. The authors called for graduate institutions to support this liberation of the new knowledge that may be gained from the many forms of self-inquiry research central to these lived experiences (Pearson & Boskovich, 2019) and said

*Self-disclosure is a personal and courageous investment to bring about change in the perception of individuals with disabilities while (re)envisioning holistic, equitable, and democratic educational opportunities, attainment, and achievement; for in silence, nothing can change. (p. 25)*

## **CONCLUSION**

There is little doubt that challenges may also arise for doctoral practitioner-researchers, both new and experienced, who choose to use autoethnography as a qualitative research approach for practice-based dissertation research. Additionally, past doctoral researchers and their research supervisors have reported on the use of autoethnography within doctoral education for these challenges that often arise when new doctoral researchers utilize autoethnography or other self-inquiry methods to gain new knowledge from the self for the discipline and practice. However, the chapter authors and others continue to report the insights and rewards gained from these methods when used for doctoral research. An in-depth and systematic approach to explore these challenges is needed and should include the identification of and solutions to these and additional barriers, as well as to better understand how doctoral autoethnographers and other self-as-subject researchers may respond to the challenges posed by utilizing the method or the perception of these methods within in the doctoral academic community. The authors and past researchers have also reported the development of doctoral researcher positionality and agency, which deserve ongoing inquiry as well as inquiry into the development of the scholar-practitioner within doctoral education for these constructs. Rather than dissuaded, practitioner doctoral scholars should be encour-

aged to explore self-inquiry research methods when paradigmatic perspectives align with interpretivist or transformative qualitative research.

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## **KEY TERMS AND DEFINITIONS**

**Agency:** Agency is a belief in one's ability to assume the initiative necessary to accept an active role in one's own research, content, process, engagement, and synthesis (Throne, 2019).

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**Autoethnography:** An often-cited definition of autoethnography was offered by Ellis and Bochner (2000) as “auto” (the self), the “ethno” (the culture), and the “graphy” (the research process).

**Evocative Autoethnography:** Meaningful and accessible, evocative autoethnography is both transgressive and critical, grounded in personal experience that sensitizes readers to issues of identity, voice, and forms of representation that deepen empathy, acceptance, and understanding of larger societal constructs (Ellis et al., 2011; Bochner & Ellis, 2016).

**Heuristic Inquiry:** Moustakas (1990) noted transcendent phenomena are worthy of deep examination as much as any physical ailment or disorder, and later systematized the process of examination of this human experience and used the Greek origin for *heuristic* inquiry to discover or find meaning from this lived experience of self by using empirical research methods.

**PCS/PCS Orders:** A PCS is a permanent change of station, which happens when an active duty service member is ordered to transfer from one duty station to a different duty station, which could be in another state or another country (Bonura & Lovald, 2015; Burke & Miller, 2018). PCS orders are based completely on the service member’s job assignment and the spouse of the service member does not have a say in the PCS location (Burke & Miller, 2018).

**Self-as-Subject Research:** Ellis and Bochner (2000) referred to *researcher as subject* to describe autoethnography; thus, self-as-subject research involves data gathered from a singular researcher-participant, rather than data gathered from other participants, within an original empirical inquiry of the lived experience of a construct and/or phenomenon (Throne, 2019).

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# Chapter 10

## Ethnographic Research

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### ABSTRACT

*This chapter considers some of the essential features of ethnography as a qualitative method. The main theoretical foundations of ethnographic approach are explained; however, the emphasis is mainly on how ethnography is done. Thus, the techniques for collecting data used by ethnographers take the central part of this chapter with some special attention to the methodology of observation. Through many examples, the authors describe the various forms of observation as a social research method. It is useful to illustrate the approach of the ethnographer through the metaphor of the “stranger” because “reflexivity” is an important part of the qualitative approach of ethnography. The practicalities of recording the field research and writing memos are fully considered in conjunction with practical suggestions and conceptual discussion, including the writing up of the final text which should be the conclusion of a consequential process, rather than a separate entity.*

### INTRODUCTION

Ethnography is perhaps a strange term, it is the combination of two ancient Greek words: *ethnos*, meaning “people” and *graph*, meaning “writing” or even “describing”; so, ethnography is writing about (or describing) a people. Within the context of research methods, it then means describing a particular social group or social setting. Ethnographic methods are part of the qualitative methodologies and enable researchers to become immersed in social worlds. They watch, listen, talk and participate. The data gathered comes from what the researcher sees and experiences. The ethnographic impulse is to be moved with curiosity about a social puzzle. The ethnographer feels compelled to go and look for herself/himself, to

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see “what’s going on”. It is all about the agendas of the people she or he want to find about, it is about their stories, their uses of objects and artefacts (Daynes & Williams, 2018; Willis, 2000).

In brief, ethnographic research is a qualitative approach where the researcher is immersed in a social setting for an extended period, makes regular observations of the behaviour of members of that setting, listens to and engages in conversations. The ethnographer also: interviews participants on issues not directly amenable to observation or that researcher is not clear about; collects documents about the groups observed; develops a deep understanding of the culture of the group and people’s behaviour within the context of that culture and finally writes up a detailed account of that setting (Bryman, 2016). Thus, ethnography is said to study people in their “natural setting”, that is, the researcher should be immersed in the daily lives of people and be able to observe “normal” social life as it happens in daily events and familiar (for the people observed) places. From that, it follows that the theory is often generated “in the field”, as well as tested in the field during the research period. Ethnography is a research approach that does not usually follow deductive theory testing: the logical and methodological links between hypothesis construction, data gathering, and hypothesis testing *does not* belong to the theoretical foundations of doing ethnography (Jerolmack & Khan, 2017).

So, ethnography is a very open-ended qualitative method, which comprises a series of techniques, can be used in a vast variety of contexts to explore a vast range of issues. It is particularly suited for in-depth exploration of small settings and it mainly relies on the researcher to collect data.

This chapter will consider some of the essential features of ethnography: first, the main theoretical foundations of the ethnographic approach are discussed, then a list of the main techniques for collecting data is outlined. The following section describes at some length the methodology of observation, which used to be considered a method, but recently is very much associated with ethnography in general. Many examples of the various forms of observation is supplied. In the section “The stranger: ethnography and reflexivity”, the metaphor of the “stranger” is used, and “reflexivity” is illustrated as an important part of the qualitative approach of ethnography. In the section “Recording field research and writing memos and analytic notes”, the practicalities of recording the field research and writing memos are described in conjunction with the relevance of this part for the overall research project: writing “analytic notes” is essential for developing an explanation of the research issue. In the last section, the practicalities of writing up the final text are mixed with conceptual issues about the very act of writing itself, as writing ethnography is a reflective exercise.

Ethnography has a very long, well-established tradition and recognised validity in the social sciences and its alleged lack of objectivity is simply a common misconception. By the end of this chapter the reader should be able to identify the foundations of ethnography and what are its main characteristics as well as understand in what cases researchers use ethnography and describe how. Furthermore, the reader should be able to distinguish and use different types of observations as a research method with some appreciation of the differences and similarities between insider and outsider knowledge. It is expected that the reader will develop knowledge on accurately recording field research notes, analytic explanations and understand the role of analytic memos in ethnographic research.

## **BACKGROUND**

Ethnography, as a research method used in the social sciences, has a long and respected tradition. It began in the 19th century and was used by early social anthropologists to understand other “exotic”

cultures and “primitive” societies (these were the adjective used at the time). Anthropologists such as Bronislaw Malinowski (who worked in the Trobriand Islands and Papua New Guinea in the 1910s) and Margaret Mead (who worked in Samoa in the 1920s), among others, used and developed ethnography as a method for collecting data. They researched marriage, trade, religious customs, the lives of adolescents in the non-western civilisations of these places. In the 1920s, a very similar approach was also developed by sociologists in the University of Chicago. They used ethnographic methods in their studies of local phenomena: slum life, immigrants, drug addicts and gangs. In both cases, these social scientists accomplished their research through a total and very lasting immersion in the fields of study (Hammersley & Atkinson, 2019).

The ethnographic approach belongs broadly to that strand of qualitative social science which argues that social facts, social events, culture and organisation cannot be studied through the methods of the natural sciences: there are no laws that can be discovered in the same way natural scientists discover a biological phenomenon, let’s say the working of DNA. The way the ethnographic method has developed was influenced by phenomenology and symbolic interactionism (Bryman, 2016), whose approach to understanding social life rests on interpretation: the main aim is then to find meaning and “webs” of meanings for the social life of the groups that are studied by the ethnographer. Ethnography is not an experimental science in search of universal laws, but an interpretative science searching for meaning (Jerolmack & Khan 2017). From these foundations, it follows that ethnography is a qualitative approach and lends itself to content-based research (chapter 4), rather than method-based research: research whose aim is to be embedded in empirical material, rather than being constrained by data which is pre-prepared by the methodology itself (Daynes & Williams, 2018).

The fact that ethnography is based on interpretation does not mean that this approach is not scientific. This is, of course, part of an old controversy: qualitative versus quantitative methods. Quantitative methods are portrayed as scientific as these deal with numbers. Surveys and statistics report on distributions of standardised phenomena, which can be quantified, hence the appearance of ‘objectivity’. However, it can be said that these standardised phenomena are simply the collection of singular unrelated facts or subjective points of view, which can constitute a view on social objectivity only by mere aggregation (Smith & Atkinson, 2015). On the other hand, qualitative research, including ethnography, can capture the “web of meaning” that can objectively influence our daily life. Moreover, it must be said that in social science, statistical methods are not a method of explanation and quantitative data is often data subjectively self-ascribed by individuals through an act of self-interpretation (Hammersley & Atkinson, 2019). Therefore, a qualitative moment is unavoidable in social science.

## **Toolbox – Some of the Elements of Ethnography**

Ethnography brings a variety of techniques into play, let’s review them in some details:

- Various forms of observation: there several approaches to observation, but for the ethnographic field, observation means recording what is going on as if the behaviour, the acts and the intentions of the members of the chosen field were mysterious and not transparent. The researchers need to note not only the details of the behaviour, the acts and the interactions happening in the field, but they also need to be able to see the overall meaning of these interactions (Bryman, 2016).
- Social interaction: the researcher may be so immersed in the field that s/he naturally come into interaction with the members of the group or setting s/he has chosen to study. These interactions

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form the basis of the understanding of rules of behaviour, cultural codes, manners, etiquettes etc. (Flick, 2014)

- Formal and informal interviews: ethnography is a collection of methods, rather than a codified methodology in itself. Following observations and participation to the social life of the group studied, the researcher may add interviews to get more information about the social life of the members of the group, their understanding of social life, their stories, their opinions etc. (Daynes & Williams, 2018). An informal chat with the members of the group may be also used in terms of obtaining accounts and participants' narratives.
- Collection of documents and artefacts: this technique was typical of early 20<sup>th</sup> century anthropologists when artefacts from far away cultures were fundamental to understand their social life and their interaction with the natural environment. It can be strange to think that today an ethnographer may be able to find unusual "artefacts" within her/his state-nation of residence. However, see underneath the box on "being an insider and an outsider" as to how a researcher may never be completely an insider. Also, artefacts may mean several different items that may be used differently according to the context or the social group. For instance, you may be an ethnographer studying an education setting, where specific items have been devised to aid teacher-pupil relations. Or you may want to collect children's drawings to obtain data on children's ideas of road traffic safety. The importance of collecting documents as part of the ethnographic research is more straightforward: internal document of an organisation or informal group may shed light on internal procedures, values etc. of the group (Bryman, 2016).
- Photographs, video and other visual material: these are becoming part of a more specialised technique called visual ethnography; however, even the non-specialised ethnographer can collect images and videos as a way of documenting spatial arrangements of people, in a way that would make it easier to illustrate it than using text. Let's just think of a classroom spatial arrangement or children's playful interaction in a play area.

The above list is not meant to be an exhaustive description of all the possible techniques of data gathering of the ethnographer in the field. These techniques are also very dependent on the ability (and indeed on the "ethnographic imagination" [Willis, 2000]) of the researcher. One crucial fact is that the ethnographer is the primary research instrument. "Unlike some methods, ethnography is not a technique that can be first mastered and then applied because in some ways every ethnography is unique, it is something the ethnographer does. In this sense, ethnography is also not something that somebody else can easily do for you." (Harvey, 2012).

Does it mean that ethnography is subjective? Absolutely not. As noted earlier, it is a well-tested methodology which has been in use for over one-hundred years. The fact that ethnography as a research methodology is depended from the person who does it implies the full immersion in the social setting to be studied. This "immersion", where the ethnographer loses himself or herself momentarily, is the guarantee that some important features of the issue or the setting to be researched are going to be captured. In social science is not possible to have a completely "objective" knowledge, of the type modelled in the natural sciences: this is just a myth (Smith & Atkinson 2016). The section of "the stranger" will also expand on this point and the position of the ethnographer will be examined under the concept of "reflexivity" (Jerolmack & Khan, 2017).

So, to recap the above, the ethnographic approach is an open-ended set of methods aimed at discovering how members of a particular group live in their environment. "Ethnography is a disciplined investiga-

tion of the enactment, articulation and transmission of social imaginaries (values, beliefs, ideas...) and material practices” (Harvey, 2012, para. 5). It is a multi-modal way to collect data and reflect through the data, where the main research instrument is the ethnographer herself.

## **Observation and Ethnography**

Until relatively recently, in social science, observation rather than ethnography was most used, however now is much more common that sociologists use the latter, which of course includes observation (Flick, 2014). There is no doubt that observation is one of the main techniques of the ethnographic fieldwork and that there are significant overlaps between observation as a standard approach to research and the ethnographic work. The various forms of observations, as they are linked to broader ethnographic research are listed below.

There are several forms of observation which can be used to gather data, the choice of a particular technique of observation depends on the nature of the group or set to be studied, on the ethical procedures in place in different institutional settings and on the resources available to the researcher.

Let’s see the most common (Flick, 2014; Bryman, 2016): to begin with, there can be **overt or covert observation**. Overt or covert refers to the position of the researcher as an observer: he or she can carry out the observation in a covert way, so the people observed are not aware of being observed; or vice versa the observation can be overt, so the people observed are aware of the researcher observing them.

## **Examples of Overt and Covert Observation**

There are several famous covert observations (Flick, 2014; Bryman, 2016), one of them is the ‘Resigners’ study (Barron & Holdaway, reported in: Daynes & Williams, 2018). Based on covert observation of daily life of policemen, this study analyses how features of employment within constabularies “racialise” the work of officers and leads to a decision to resign. It is argued that the occupational culture of policing remains a key context for the “racialisation” of relationships between officers from the majority and minority ethnic groups. If policemen knew they were observed for research purposes, they would have behaved differently.

An overt type of observation would be a researcher simply sitting in a corner of a train station and observing the daily behaviour of commuters or sitting in a corner of a café and observing customers coming in and out of the café. In this last case, the overt observer would: observes their orders, how long they stay, the activities they do while at the café (swiping their phones? Reading a newspaper? Chatting with friends or colleagues?). Overt observation can also be a researcher sitting in a school classroom and observing a teacher delivering a lesson to the students. If the researcher has done this type of observation several times, her/his presence may become normal and so both teachers and pupils will naturalise this presence and will become less aware of being observed. Even better if the researcher is also a Teaching Assistant who can simply sit in a corner for part of the day, then the observation can be overt but also not intrusive.

**Observations** can be also a **participant or non-participant**. Participant observation means that the researcher is fully engaged with the daily activities of the setting or of the people she is studying. Non-participant observation means that the researcher is not an active member of the group she is observing. The researcher is simply there to take note of the events and interaction of the setting s/he is studying.

## Examples of Participant or Non-participant Observations

The above mentioned ‘Resigners’ study is also an example of participant observation, whereby the observer is participating fully in the activities of the group involved. Another example would be a researcher taking the role of a Teaching Assistant and do participant observation while supporting the didactic activities as part of her or his job description (see also case study below).

Given ethical permission granted, an example of non-participant observation is the observation of children in a nursery’s classroom with a one-way mirror, where the observer can see the children, but the children can only see the mirror. This example is also an instance of covert observation. The two examples above illustrated can further be qualified as **covert, participant observation** – where the researcher camouflaged themselves with the members of the group which is the object of the study (the “resigner” study), and **covert non-participant observation**, where the researcher is not visible to the members of the group and they are unaware of being observed (the study of children’s nurse).

## Brief Examples of the Overt Participant and Overt Non-participant Observations

There are also an overt participant and overt non-participant observations. In the above example of the Teaching Assistant as participant-observer in an ethnographic study of the classroom, the researcher made students and colleagues aware that s/he will carry out research observations while doing her duties as Teaching Assistant. So, the group would know that they have been observed. In such a case then an **overt, participant observation** takes place. The above examples of overt observations can also suit the description of non-participant observation: sitting in a corner of a train station and observing the daily behaviour of commuters or sitting in a corner of a café and observing customers. The researcher can do these observations without taking part to the daily activities of commuters or customers: the observer can sit in a corner, being visible and taking notes without greatly affecting the daily business of commuters or customers. In such a case then an **overt, non-participant observation** takes place.

Which of these types of observation are best? From the above examples, it should be clear that the type of observation required in an ethnographic study is dependent on the type of field to be studied and the initial research questions. The “resigner” study could only have been based on a covert, participant observation. Back then, no policemen would have acted in a racist way or made explicit derogatory remarks if the overt observation was in place. Observing toddlers in an early year setting, to see how they spontaneously develop play (and what kind of play), can only be done observing them from behind a one-way mirror, so through a covert non-participant observation. On the other hand, critical ethnography would probably recommend that the researcher should be an overt, participant-observer, who takes the side of students against the injustices of a repressive education system (Smyth, 2016). So, it depends on the setting to be studied and from the aims of the research.

## The Undergraduate Student as an Ethnographer in the Classroom: A Case Study

*The following example of ethnography refers to an educational setting. We have modified the example and broadened its scope, so to illustrate how in practice an undergraduate student can do ethnography.*



*Michelle (fictional name) has been working as a Teaching Assistant in a primary school for two years, but now she studies Social Sciences at University and want to use ethnography for her final year research project. This is what she does. First, she devises the research questions: she is interested in how social policy X has been understood, interpreted, and implemented in her school setting. She has had already some working experience of the process of implementation of this policy. She then reads academic material around childhood and Social Policy. This reading allows her to develop a certain sensitivity to the issue and to become aware of the social and political context of the policy X, its actors and its 'recipients'.*

*Once she has done that, she arranges with her employer the possibility to do an ethnographic study within the school. The fieldwork then consists of carrying out her normal duties whilst doing ethnography. She takes advantage of her position as an insider to gain access to a good number of people affected by policy X. So, as part of her fieldwork, Michelle participates in a meeting, works with colleagues and children in the classroom, discuss work-related items with colleagues, read emails etc. as per work duties, but paying special attention to discussions around policy X and its implementations.*

*Whenever possible, she takes some time off to write down notes of what she has observed, discussed or participated in during the normal workday. In developing her ethnographic study, Michelle asks colleagues and line managers about the policy X or aspects of the policy X, this is because it is part of her job, but it also becomes part of the gathering of data. In a few words, she realises that there are no clear lines of demarcation between her duties and her role as a researcher.*

*Using "insider knowledge", she can also describe the setting, work procedures etc. with the possibility of using informal chat with colleagues as unstructured interviews. Ethnography, in this case, it is not only about overt participant observation and unstructured interviews (which also can be formal, arranged at the end of the workday or even as part of a staff working hours): access to and study of work document (memos, policies, procedure etc) is also an important aspect of the methods typical of this research approach.*

*As Michelle has a busy schedule at work and home as well, she faces practical difficulties in writing down the observations and fieldwork notes. These practicalities are sorted out through several techniques, like recording voice memos on her phone, jotting down keywords or events (sometimes even in the W.C.!), only to develop them later in more comprehensive notes. Sometimes she simply stays at work late to complete the notes. For this ethnographic project, being an insider is key. Michelle can have access to the field, to documents, to staff and have interaction with children.*

*To sum up, in this case, her methods are observations, interviews and analysis of internal documents.*

### **Critical Thinking Challenge 1**

1. *What are the different kinds of observation and what are their benefits?*
2. *Should ethnographers adopt an active or passive role in the settings in which they carry out research?*

## **The Stranger: Ethnography and Reflexivity**

Several texts explain how in ethnography the researcher is one of the primary tools of data collection (Daynes & Williams, 2018). Here, expanding further on that, the “reflexivity” of the researcher is discussed, giving indications as to how the researcher can maximise her or his position in the field to collect insightful observations and develop the explanation of the research puzzle. The concept of the “stranger” is used to clarify the meaning of “reflexivity”. Reflexivity means how the ethnographer develops awareness about her position within the social group she is researching: how close she is to the members of the group, how familiar or unfamiliar with them, and how the reciprocal interaction she performs with them during the period of the ethnographic study may develop in ways that are conducive of new knowledge. As Hammersley and Atkinson (2019) say: “by including our role within the research focus and perhaps even systematically exploiting our participation in the settings understudy as researchers, we can produce accounts of the social world” (p. 18). How the peculiar position of the ethnographer can achieve this “production”?

A social group has its cultural pattern of life (mores, habits, customs, ways of doing, etiquettes, rituals, laws or rules, fashion etc.) and members of that group take these for granted: these are habitual and automatic things to do. A stranger entering such a group does not have this insider’s sense of the world and s/he will find it unfamiliar, problematic or even questionable (Best, 2019). Yet the stranger can become a member of the group through participation, and so s/he may gain an insider’s understanding of that culture. Moreover, the stranger can achieve a more “objective” understanding of that culture because s/he can make sense of what (to other members) seems self-explanatory. The stranger knows that other ways of life are possible (Best, 2019). This stranger is the ethnographer.

Let’s see how it works for Simmel (1971) (see also: Best, 2019). His analysis of the stranger is closely related to the concept of reciprocal action. This relation is characterized by the principle that everyone is defined based on his or her way of living and of interacting socially with other individuals. As a result, Simmel considers society as a set of social relations through which it is possible to know and understand the attitudes and features of society itself. The pivotal argument, therefore, of the sociological analysis of Simmel (1971), is to understand and study what are the procedures by which interpersonal relationships are born and reproduced between individuals of the same society (Best, 2019).

So, his analysis is focused on the relationship that links “the stranger” to “the native”. In other words, Simmel is concerned with studying the whole set of social actions that a person performs in connection with the “other”, with the stranger. This procedure, making yourself into a stranger relative to the group you are studying, is crucial to understand the nature of a social structure, for instance, the closeness or distance in the interactions between people (Best, 2019).

Following this theoretical framing, the ethnographer is framed as a stranger who is well-positioned to explore, gather data and interpret the social life and culture of a particular setting. It is through her/his reflexivity that the ethnographer as the stranger can capture mores, habits, customs, ways of doing and the culture that members of the group take for granted (Jerolmack & Khan, 2017). Reflexivity in this context makes the ethnographer an outsider and an insider at the same time because the ethnographer can never be a total stranger, through reflexivity the researcher must establish cultural proximity at the same time if there is something to be socially understood through interaction at all.

## Critical Thinking Challenge 2

*Can you think of a social setting where you would be the stranger? What kind of setting that would be? And what its features? How would you approach this particular setting if you had to devise an ethnographic study?*

In the paragraph underneath, there is an example of how the researcher can be very often a “stranger” (outsider) but also familiar (insider) with the setting/issues researched in a way that can help to formulate research questions and the research design.

### **Example of Being an Insider and an Outsider**

This is an example of my research on the work-family balance of British families in the north of England (Ba', 2017).

As a researcher I shared several characteristics with the people who took part in the research: namely, being in a committed relationship, having a very young child and work commitments. Researching family life is a particular area in which the researcher is always involved in one way or another; qualitative family research takes this as a starting point (Hackett, 2017). Moreover, sharing the above characteristics with the rest of the parents made my position particularly close to their experiences. It is also from being an insider that I developed a sort of pre-understanding of family life, with its difficulties and the strategies employed in juggling work commitments. This perhaps meant that I was already oriented to hearing and understanding certain experiences rather than others, but also that there was a quicker way to communicate on these themes and to refer to shared experiences. Thus, personal involvement predisposes the researcher to enter the field with perspectives shaped by subjective experiences, but exactly because of that, these perspectives are more valued than a detached approach which would register “natural” occurrences whilst emptying them of meaning.

As well as being an insider, I was also an outsider in the field: I am not British, as the majority of participants were, and English is not my mother tongue. Nonetheless, my different background helped me to view some of the practices presented in the accounts as “anthropologically strange”, like something I would not do or refer to in the same terms in Italy, my home country. This different point of view was validated and recognised in the course of conversation with one of the participants, Michelle, a French woman married to an English person, leading to observations regarding the cultural specificity of certain practices and routines in British families, as the extract from the interview may show.

Michelle: For me, there is the important thing that this is not my culture... that England is not my own country, so for example in France you don't feed your kids at 5.30, it's much later and the routine is completely different. Just being in a different country makes the experience different! ... I am sure you experienced that as well.

Interviewer: Oh yeah, I feel the same...

Michelle: It's funny, that

That account was used to show how taken-for-granted routines are not so normal in the eyes of “strangers”. Recognising practices as not completely normal through the accounts of a participant assisted the process of interpretation in detecting cultural practices, that is, specific approaches to meaningful family

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time. In this case, being an outsider helped me to recognise the possible descriptions of practices that were referred to in participants' accounts. From that position, I avoided being involved in assumptions one may make as a member of a cultural group; being an outsider as well as an insider helped me to make these assumptions explicit.

### **Critical Thinking Challenge 3**

*What does 'reflexivity' mean and what implications does this have for doing ethnography?*

## **Recording Field Research and Writing Memos and Analytic Notes**

Taking field notes is central to ethnography. Recording observations, writing notes about formal interviews or more importantly writing down notes after informal interviews or even chats (not recorded on tape) that the researcher has had during the fieldwork, is fundamental for the development of the qualitative data that will constitute the evidence of the ethnographic research.

Writing field notes is part of the "craft" of becoming an ethnographer, however good organisation and planning of the research in the field can help to find enough time and for writing down observations, interactions and informal discussions happening during the research (Hammersley & Atkinson, 2019, p. 142).

Strategies for taking notes and recording field work depends on how the observations are carried out (overt or covert, participant or not participants etc). So, if there are covert observation to perform, and the ethnographer is a participant in the field, then taking notes on the spot will be extremely difficult. Given that human memory is fallible, a good strategy for taking notes as soon as possible after the event has taken place is fundamental (Bryman, 2016). On the other hand, covert, non-participant observation allows greater freedom in terms of time and space to write down notes.

Practicalities of recording the field research also depend on the stage of qualitative research. So, the beginning of an ethnographic study is usually open-ended, hence the need to record as much as possible (given the scope of the initial research puzzle of course). As the fieldwork progress, the researcher analyses the data collected up to each point in time and consequently narrows down the focus and select specific features of the field or the members of the group s/he is studying (Hammersley & Atkinson, 2019; Bryman, 2016).

Selectivity in observing and recording field notes from the part of the ethnographer is almost inevitable (Hammersley & Atkinson, 2019). Social life is rich and dynamic, complex and diverse and this is always reflected in the setting or in the social group which is to be researched. The ethnographer should be aware of that and use reflexivity to manage the process through which facts, accounts and events are recorded. This awareness should be linked to the initial research puzzle and should be developed openly, looking for testimonies that may contradict the theoretical assumption as well as recording accounts and facts that may explain the research puzzle (Gubrium & Holstein, 2014). This development of the focus, this selection of issues to further investigate is part of the analytical moment of ethnography.

While doing the research and recording field notes, it is highly recommended to develop hypotheses, further research questions and make links with literature, ideas and theories.

These developments should be noted down in *analytic memos*. "These are not fully developed working papers but occasional written notes whereby progress is assessed, emergent ideas are identified, research strategy is sketched out, and so on" (Hammersley & Atkinson, 2019, p. 151). Analytic memos are, as

the name suggests, a way to develop the analysis of the ethnographic material, as well as to prepare the presentation of the main argument. In Ethnography, the analysis of data is not a distinct stage of the research (Hammersley & Atkinson, 2019). Through the analytic memos, emergent ideas are then identified: this is a process of selecting a certain aspect of the issue over others deemed to be less significant, it is an ongoing analytical process that in ethnography starts from initial observations and culminates in the writing up of the final report (Flick, 2014). These ideas emerge from the observed issues, from the constant interaction of the ethnographer in the field and contribute to focusing on selected features of the field under study, that is: on their analysis. The chapter on Qualitative Data Analysis will show how important it is to develop explanations earlier on, during the data-gathering phase and how the analysis is developed through a constant comparison between the data gathered and the level of explanations accomplished at successive stages. Grounded Theory Methodology (see chapter 9) is amongst the procedure suggested doing analysis in ethnographic research.

For this chapter, it is important to say that: 1. It is difficult to separate purely descriptive notes from analytic notes, as the selectivity and reflexivity of the ethnographer are in action since the outset of the research; 2. In qualitative research, the research does not start from formalised hypotheses but research questions, so it is necessary to narrow down the puzzle as the research project advances. In general, the analytic memos will help the researcher to focus in a fruitful direction and provide the basis for the analysis and the explanation of the research puzzle. It is in the analytic memos that the first outline of an overall understanding of the research issues will be developed.

#### Critical Thinking Challenge 4

*What are analytic memos and what kind of use can you make of these in ethnography? How analytic memos can help the researcher in developing an explanation?*

#### Writing the Result of Ethnographic Research

As Hammersley and Atkinson (2019) state, language is “not a transparent medium of communication [and we] can never reduce writing to a simple set of skills or prescriptions” (p. 191). Thus, the very act of writing the final report about the ethnographic study is not an automatic act of transferring the records and analytic memos to a final well-written text, in the same way, a natural scientist may simply refer to the results of the lab experiment. Writing ethnography is yet again a reflexive exercise.

As stated above, the analysis of the research issue and the development of the final version of the study may follow the lines of Grounded Theory Methodology (see chapter 11), whereby the interpretation of data can be taken in stages, towards an ever more increasing level of generality and/or abstraction.

This last stage of writing up the result is then not separated from the previous analytical stages, on the contrary: “writing is closely related to analysis.” (Hammersley & Atkinson, 2019, p. 191) and not just a mechanical exercise that can be produced simply mirroring the objective result of ethnography, especially because as seen above, the qualitative approach to understanding social life rests on interpretation. When the main aim is to find “webs” of meanings, then the writing must reflect this search and it can only be a reflexive reconstruction of the lines of this web. Through reflexivity, the ethnographer put together the pieces of the puzzle that constitute the answer to the research puzzle (Hammersley & Atkinson, 2019). This reflexivity culminates in the final writing, but it is never an automatic product of

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the research: the ethnographer will arrive at it through series of drafts, which will be ever more reflexive of the experience of the field.

Writing ethnography means using the data collected to substantiate a theoretical or conceptual argument which was in the form of a research puzzle at the beginning of the research and now is taking a more specific and analytical form. This kind of embedding of a conceptual argument in empirical material is not simply about translating data into a coherent sociological argument. As suggested in chapter 4, content-led social science research develops its argument *through* the data rather than imposing the logical argument *on* the data.

To conclude this part, it is important to make the ethnographer aware that, whilst it is taking form on the paper, the final argument may not always be logically consistent. This may seem a paradox, but contradictions belong to social life, not just to logical categories – so *contra* Hammersley and Atkinson (2019) it is not about making “analytic sense of [multiple strands of social life] before we reintegrate them into the synthesis of an ethnographic account” (p. 194). Rather, the internal contradictions of these strands of social life should be acknowledged in the final report, the researcher should allow space to show how social life is antagonistic, not simply linear and logical. Highlighting multiplicity is not enough: when needed, the ethnographer should expose contradictions and antagonism as a meaningful feature of social life (Bonnet, 2009).

### **“The Class Clown”: An Example of Critical Ethnography – Advanced Level**

The following is an example of critical ethnography performed by Judy Radigan (2002) and it should be read in conjunction with (or after) reading chapter 4 on Critical Theory. In such an example, critical ethnography does not start from a “blank sheet”: this study assumes previous knowledge on both the substantive area of inquiry and the actual methodology in use. So, Radigan (2002) uses Critical Ethnography (Smyth 2017) while refining some of its methods: in particular, she adapts for her study the analytical tools of “validity horizon reconstruction” and “interactive sequence investigation”. Here, it is not about unpacking exactly what those tools are about, for the moment it will suffice to say that she borrows conceptual apparatuses and methodology from existing and well-established disciplines.

The research puzzle is about the “class clown” and how this presence in the classroom can disrupt normal didactic activities but also offer the possibility of in-depth conversation and dialogue between the teacher and the students. How exactly the disruption takes place and how exactly teachers can enter in constructive dialogue with the students, this is exactly what the ethnographic research intends to discover. As the aim of the research is practical, that is: opening a dialogue-based method of teaching and subverting oppressive educational practices, the class clown can be the student who can instantiate “epistemological interactions” (Radigan, 2002, p. 273), that is, profound re-thinking of the content of education and the role of the educator in the classroom (see also Valenzuela-Fuentes, 2018).

Radigan (2002) therefore re-conceptualises for this study the contribution of other scholars, whose works have conceptual relevance in framing the field where she needs to do research. This methodological move should be considered not just an act of appropriation, it is not just about using pre-existing concepts, but it should be seen as an act of “cultural intuition” (or theoretical sensitivity) as seen in chapter 4. Research never starts from zero and concepts are needed to frame the research puzzle. In Radigan’s ethnographic project, this cultural intuition has led to a detailed conceptual design of her research plans (see also: Smyth, 2017).

Her method of investigation included seven ethnographic observations of a middle school in the USA, with the video recording of five of these observations (lessons in a classroom). The transcriptions of classroom interactions were then analysed and coded through Critical Ethnography's procedures. Interviews with students and teachers were also used (Radigan, 2002, p. 259). Her approach used the above-mentioned methodological tools for analysis, such as "validity horizon reconstruction" and "interactive sequence investigation" (Radigan, 2002, p. 259). For reasons of space, it is not possible to go into the details of these categories of data analysis, however, it is important here to say that this type of methodology, Critical Ethnography, mobilises several concepts and methods to:

1. Develop an intensive research design, whereby concepts are re-formulated and reflected upon at the time of planning the research and are advanced for framing the research puzzle.
2. Frame and conceptualise the substantial issue and its context: in this case, it is not just about the "class clown" that we want to know in abstract: it is how this character can instantiate dialogue and change in the classroom.
3. Articulate the empirical material in a way that it may become intelligible, without losing its complexity. Radigan (2002, pp. 267-268) shows how these research tools can only acquire meaning when applied to empirical material and this empirical material gain meaning through a painstaking form of coding and analysis, which is performed at the end of the ethnographic process.

### Critical Thinking Challenge 5

1. *Try to think of a problem/question you could explore using an ethnographic approach. Then consider the issues you might encounter while conducting that ethnographic project.*
2. *What issues might arise in terms of accessing your field or getting in contact with the people you are interested in researching?*
3. *What are the practical problems you would have to overcome to do your project*

## CONCLUSION

It is important to state again that ethnography has a very long, well-established tradition and a recognised validity within the social sciences. A common misconception of undergraduate students is that Ethnography (as other qualitative methods) lacks objectivity. This chapter shows once again that often the concept of "objectivity" is simply a myth, and that social sciences' methodology should aim to capture social relations, their meanings and the way these meanings constitute our social world. At best, ethnography capture these meanings in all their clarity, but also in all their contradictory status, as a social reality is often a reality of social contradiction.

Ethnography main strengths are its "multi-modal" approach to social life, that is: ethnography is linked to a series of techniques that the researcher can use according to the needs of the research. As a set of research methods, it has adapted very well to critical approaches in social science, from feminist ethnography (see an example in Bryman, 2016, p. 447) to critical ethnography (for example Smyth, 2017); signs that it is a methodology that is capable to articulate the language of marginalised groups.

The main weakness would be that one of the main instruments is the researcher herself/ himself, as seen above. The ethnographer is the stranger that becomes an insider and in doing so s/he needs to build

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relationships and ultimately trust in the social setting object of the study. This peculiar position of the ethnographer risks producing subjective accounts, although this risk can be overcome through a series of reflexive arrangements. Moreover, there is also an ethical risk, as the ethnographer needs to rely on the trust of the community s/he is researching, hence the possible breach of trust if the publication of the study implies divulging sensitive or personal information. Critical ethnography would make a political act of turning private troubles into public issues, but not all ethnographers may be prepared to do so.

Yet, it is possible to conclude, in line with other many studies on ethnography, that this is an approach that opens up the possibility to study social world in-depth through a sophisticated understanding of the meaning produced by the members of that particular world.

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## KEY TERMS AND DEFINITIONS

**Field:** The specific setting in which the ethnographer is planning to do research.

**Interpretation:** The capability to make sense of qualitative data through a specific understanding of meaning.

**Natural Setting:** The social context which is habitual and normal for members of a social group, where ethnography may take place.

**Paradigm:** Refers to varied philosophies used in research, e.g. positivist, and social constructionist.

**Reflexivity:** How the ethnographer develops awareness about her/his position within the social group s/he is researching.

**Social Group:** A relatively homogeneous group of people, linked by at least some social relations, who may constitute the people that the ethnographer is set to study.

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# Chapter 11

## Autoethnography in Information Science Research: A Transformative Generation and Sharing of Knowledge or a Fallacy?

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### ABSTRACT

*This chapter examines the concept of autoethnography as a qualitative research method. It aimed to investigate the critical question of the importance of autoethnography as a transformative scientific research method for the purpose of generating and sharing knowledge to advance research in information science. The chapter is an exploratory study investigating the current context of autoethnography in information science, its applicability to the field for transformative learning and knowledge sharing, and possible challenges to be experienced. Findings indicate the potential of the autoethnographic method to provide the opportunity for information professionals to study experiences of information use in diverse contexts of information science. Recommendations highlight the viability of the application of sense making theory and the information search process (ISP) model to research practices in autoethnography by information scientists.*

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## **INTRODUCTION**

Qualitative research methods lie within the interpretive paradigm which focuses on complex social constructs that seek to understand human actions from the perspective of the social actors themselves. The key assumption in qualitative research is that events that occur can only be understood through the eyes of the actual participant in context (Babbie & Mouton, 2001; Gorman & Clayton, 2005; Berg, 2012). As an approach, qualitative research method is able to provide a descriptive analysis of the social context it examines, in this way, it affords the researcher with the facts and figures that allow for the interpretation of findings in the context of the community or situation being investigated. Similarly, the fact that qualitative data are collected over a sustained period of time makes them useful for studying social processes within any given context (Bryman, 1988; Denzin & Lincoln, 2005).

In practice, qualitative research methods lack the precision and definition of quantitative methods, its processes are inductive, that is, theory formulation is grounded in the findings of the research which can be used to support, refine, compare or formulate new theories (Sarantakos, 1993). The methods and approaches used in qualitative research therefore relate to the processes and meanings that are not experimentally examined or measured in terms of quantity, amount, intensity or frequency but rather emphasise the socially constructed nature of reality and the situational constraints that shape the inquiry. However, qualitative research, does allow for a more nuanced approach to the development of theories (Creswell, 1994; Dezin & Lincoln, 2011; Creswell, 2014). The following approaches have been identified as being distinctly aligned to qualitative research methods among which include case study, ethnography, phenomenology, autoethnography, grounded theory and narrative inquiry (Leedy & Ormond, 2005).

## **PURPOSE OF THE STUDY**

Autoethnography is a relatively new research approach within qualitative research methods; it is a method that seeks to describe and systematically analyze the personal experience of a researcher in order to understand a particular context, cultural belief or practice (Ellis, Adams, & Bochner, 2011). It entails the researcher writing about themselves as a form of critical self-inquiry in which he/she is at the centre of investigation as the “subject” as well as the “object” or participant being investigated (McIlveen, 2008; Ngunjiri, Hernandez, & Chang, 2010; Denshire, 2013). However, this particular feature of the research method has been a subject of much scrutiny as it involves highly personalized accounts where the opinion of the researcher is written in the first person which opposes the widely accepted view that maintains that any rigorous and valuable research should be undertaken from a neutral, impersonal and objective stance (Holt, 2003; Ngunjiri, Hernandez, & Chang, 2010; Méndez, 2013). Similarly, even though autoethnography as a qualitative research method utilizes data about self and context in order to gain an understanding of the connectivity with other social phenomena, issues of ethics, the absence of a strong analytical approach and the inability to generalize research outcomes have constituted some of its major limitations as a research method (Anderson, 2006; Ellis, 2007; Méndez, 2013). Despite these challenges, the applicability of autoethnography to various disciplines, professional practice and organizations is growing thereby providing an opportunity to further interrogate the assumptions and processes that define this research method (McIlveen, 2008; Parry & Boyle, 2009; Doloriert & Sambrook, 2012).

In Information Science research, Guzik (2013) asserts that autoethnography as a research method is underutilized. A few studies have however indicated that the application of this research method has the

potential to enrich our understanding of the contextual character of information in terms of user information seeking behaviour (Guzik, 2013; Wheeler, Graebner, Skelton & Patterson, 2014; Anderson & Fourie, 2015). In library and information science (LIS), Anderson and Fourie (2015) argued that rather than a continuous focus on the user, a new emphasis on the activities of librarians at varying stages of their respective careers and the unique stories they tell through a narrative methodological approach as autoethnography, can offer useful insights into how information services can be improved from the experiences of information scholars and practitioners. There is also a growing exploration of autoethnography in health information behaviour research (Sarfe & Marlow, 2015; Chang, 2016; Simeus, 2016). In this regard, autoethnography also has the capacity to encourage collaborative ways for information sharing in ways that inform professional practice thereby transforming the knowledge base of information science and the profession (Ngunjiri, Hernandez, & Chang, 2010).

In this chapter, the critical question to be addressed require an in-depth exploration of whether autoethnography is a transformative scientific research method for the generation and sharing of knowledge to advance Information Science or is it a fallacy to consider it a scientific research method that has the potential to contribute to Information Science discipline? According to the National Science Board (2007), transformative research is one that restructures and revolutionizes our means of inquiry, in a way that enhances our knowledge base. It has the capacity to promote paradigm shifts, produce technological cascades, improve existing technologies, and provide a more complete understanding of the universe (Trevors, Pollack, Saier, & Masson, 2017).

Thus in the context of the chapter and in relation to information science research, transformative scientific research can be viewed as research that has the capability to produce a major impact on current research practices that can change our understanding of existing scientific research approaches within the field leading to the adoption of a new qualitative research method in information science (Boyd, 2008). Considering the critical question in the midst of arguments from the literature alluded to earlier in the use of autoethnography as a qualitative research method with respect to Information Science research, the following specific questions are posed:

1. What constitutes autoethnography in the current practice of Information Science research?
2. How can autoethnography be effectively adopted for knowledge sharing in Information Science research and practice?
3. Which fields of Information Science is autoethnography applicable?
4. How does autoethnography advance multidisciplinary or trans-disciplinary research in Information Science?
5. What specific challenges are experienced in the use of autoethnography as a research method in Information Science research?

## **BACKGROUND**

A vast amount of research in autoethnography have been undertaken in relation to qualitative research methods in the past few years. The central position of much of the discourse in these studies is the investigation of the increasing influence and relevance of the method in various disciplines in research practice in Higher Education Institutions (HEIs). Such studies within HEIs are also aimed at the need to further examine the broader implications of its applicability in the professional development context.

Pioneer studies on the emergence of autoethnography as a research method are credited to the ethnographic study on the Dani Valley people of Indonesia by Karl Heider (1975) and later in the work of David Hayano (1979) who used the phrase to explain the phenomenon of ethnographers researching their 'own people' or "insider ethnography" (Hayano, 1979). Further developments on the method are also identified in the work of Reed-Danahay (1997) who emphasized the importance of recognizing relational ties between the researcher and the cultural members being investigated through autoethnography. However, proponents to a more radical approach to autoethnography as a research method are reflected in the works of social scientists Ellis (2004), Bochner (2001), and Denzin (2005) whose quest was to explore narratives about personal experience as a viable research methodology for analyzing cultural phenomena in ways that challenge other standardized methods of doing research (Ellis & Bochner, 2000; Ellis, Adams, & Bochner, 2011; Allen, 2015). This phase in the history of autoethnography witnessed a period of a "crisis of confidence" in the 1980s inspired by postmodernist's views which were aimed at reforming the objectives and forms of social science inquiry particularly in ethnographical methods (Conquergood, 1991; Denzin & Lincoln, 2000; Ellis, 2007; Ellis, Adams, & Bochner, 2011). The uniqueness of the contribution of these factors to the development of autoethnography as a method of inquiry in qualitative research is that personal experience has the potential to produce complex and meaningful research in ways that create a better understanding between people in a sociocultural environment thereby enhancing positive social change (Ellis & Bochner, 2000).

## **DEFINITION OF AUTOETHNOGRAPHY**

There is no general consensus on the definition of autoethnography as a research method. According to Sparkes (2000), autoethnography can be defined as a "highly personalized account that draws on the experience of the author/researcher for the purpose of extending sociological understanding" (p. 21). Ellis (2004) describes it as a "research, writing, story, and method that connect the autobiographical and personal to the cultural, social, and political" (p. xix). Adams, Jones, and Ellis (2015) also define it as a research method that uses a researcher's personal experience to describe and critique cultural beliefs, practices, and experiences. Other commentators simply view it as an alternative method of research and genre of writing where the style is personalized and subjective and different from traditional academic writing.

The difficulty in finding a precise definition of autoethnography stems from the character of the inquiry method or writing style itself which combines the techniques of autobiography (auto – meaning self) and ethnography (Ethno – meaning culture) and graphy (meaning – writing) (Ellis & Bochner, 2000; Ellis, 2004; Ellingson & Ellis, 2008; Ellis, Adams, & Bochner, 2011). The difference however, is that while ethnographers do this by becoming participant observers in the culture in which they are studying, autoethnographers use hindsight to retrospectively and selectively write about past experiences. The writing style in autoethnography is usually done in the first person, expressed sometimes as a conversation, a dialogue or story (Ellis & Bochner, 2000). In this regard, autoethnographers have been known to adopt a variety of genres such as fiction, novels, poetry, memoirs, diaries, songs, and many similar artefacts to share their experiences (Muncey, 2010). The reflexive manner in which the autoethnographer consciously embeds himself or herself into the discourse helps to make personal and sociocultural experiences meaningful and engaging thereby establishing a connection with the reader (James, 2012; Douglas & Carless, 2013). This ability to provide thick description of a particular culture

or experience by the autoethnographer has the potential to contribute to other people's lives by making them reflect on and empathize with the narrative presented. As a research method, autoethnographic style of writing is thus helping to facilitate insight to personal experiences for the purpose of extending sociological understanding (Hugh & Pennington, 2017).

## **APPROACHES TO AUTOETHNOGRAPHY**

As a field of research in qualitative methods, autoethnography is connected to the major types of qualitative research approaches particularly in the way it draws on personal narratives (Hugh & Pennington, 2017). As an approach, it aims to analyze the experience of the researcher to illustrate various facets of socio-cultural life in ways that are familiar to both insiders and outsiders (Ellis, Adams & Bochner, 2011). Autoethnography constitutes two main types of approaches namely, analytic and evocative autoethnography (Anderson & Fourie, 2015):

Evocative autoethnographic accounts are usually emotionally engaging and primarily subjective to the researcher (Chang, 2008). They are detailed and descriptive, confessional in nature and characterized by a high sense of emotion (Bochner, & Ellis, 2016; Gariglio, 2018). Anderson (2006) says evocative autoethnography emphasises an emotional style that aims to fully engage the reader in the writer's personal stories. They are often disseminated in varied forms including textual formats, such as poems, films, maps and photo diaries (Denzin, 2006).

Analytic autoethnography on the other hand is directed towards objective writing and analysis of a particular group in ways that help connect the researcher to the social phenomena being investigated than those provided by the data (Denshire, 2013; Wheeler, Graebner, Skelton & Patterson, 2014). It is scholarly in nature and aligns more with mainstream ethnographic understanding of the self as connected to a particular ethnographic context (Wall, 2016). Analytic autoethnography focuses on substantive issues rather than stories and in practice, theory can be merged with the ethnographic understanding of a social phenomenon and patterns of social interaction in ways that can enhance theory building (Tetnowski & Damico, 2014; Livesey, & Runsen, 2018). Anderson (2006, p. 378) identifies the following conditions for undertaking analytical autoethnography:

1. The ethnographer is a full member in the research group or setting;
2. Analytic reflexivity;
3. The ethnographer is visible as such in published texts;
4. Dialogue with informants beyond the self; and
5. The ethnographer is committed to developing theoretical understandings of broader social phenomena.

Differences between the two approaches have been the subject of much debate with most of the criticisms being directed at evocative autoethnography which is seen to be too subjective and emotive as compared to analytical autoethnography which is systematic and rigorous (Anderson, 2006; Atkinson, 2006; Vryan, 2006). The dominance of the evocative approach in autoethnographic research is also viewed by critics as paving the way for more personalized research in autoethnography as opposed to the analytic approach that is more conventional with accepted academic standards (Wall, 2008). The adoption of any of the above approaches in autoethnographic studies often presents methodological

challenges to researchers hence the application of theoretical and methodological frameworks helps to provide guidance (Allen, 2015).

Theoretical foundations to research in autoethnography have often been aligned to social constructionism (Ellingson, & Ellis, 2008). Social constructionism is defined by Gergen (1999) as a perspective which believes that a great deal of human life exists as it does due to social and interpersonal influences. Social constructionism emphasizes the significance of the involvement of other people in the construction of the self because research data obtained are considered to be co-created by both the researcher and the participant. It can also be used as a schematic map to represent the complex picture of the interplay between the self and others. In practice, autoethnography has been used as a vehicle to operationalize social constructionist perspectives in order to establish trustworthiness and authenticity in the research process (Ellingson & Ellis, 2008). The application of social constructionism to autoethnographic research can thus be used as a means to understand the nature of knowledge production by providing the researcher with a theoretical basis for conducting a research study.

## **METHODOLOGY**

This chapter is a conceptual analysis of autoethnography as a research method within the qualitative research paradigm. The key concepts as discussed in the chapter include:

**Autoethnography:** An ethnographic method of inquiry that utilizes the personal experiences of the researcher as primary data. It employs a self-narrative form of expression in engaging the reader to the experience thereby enhancing a wider understanding of social issues (Chang, 2008; Dashper, 2015).

**Information Science:** An interdisciplinary field of research that integrates features from information technology, computer science, library science, cognitive science, social sciences and communication science. It explores methods for the organization and dissemination of knowledge through various processes.

**Transformative Generation:** Research that restructures and revolutionizes the means of inquiry and enlarges the knowledge base of a particular field of study in ways that improve existing practices (Trevors, Pollack, Saier, & Masson, 2017).

Based on the research questions and review of extant literature, the chapter examines the relevance and application of autoethnography to the field of information science and identifies the gaps in knowledge as a basis for future research. The methodology is considered appropriate as it contributes to a better understanding of the concept autoethnography and its prospect to information science research.

## **LITERATURE REVIEW OF AUTOETHNOGRAPHY AND ITS APPLICATION**

Developments in the field of autoethnography as a research method is gaining acceptance among scholars across a wide spectrum of disciplines. Informed by the need to share their experiences and address social issues, current studies in autoethnography are emerging across a wide range of academic disciplines particularly within the arts and social sciences. The differing nature of such studies are as varied as the topics, but the purpose is to produce analytical and accessible texts that are impactful to academic research (Holman-Jones, 2005).

Campbell (2016), explored the viability of autoethnography as a research method for legal education research. She examined some of the common issues faced by legal educators with respect to changes to

legal training, new understandings of what it means to be a lawyer, legislative effects, staff and student engagement with technology and argues that despite possible challenges, the hyper-reflexive character of autoethnographic methods can be adopted to gain a deeper understanding of the culture of legal education. Personal narrative approaches with an analytical framework can be used to capture and produce meaningful phenomena particularly in clinical legal education which deals with the practical aspect of legal training for educational experience (Sullivan & others, 2007).

In vocational Psychology, McIlveen (2008) posits the use of autoethnographic methods for practice in career development. He maintains that even though autoethnography has not been established or legitimized within psychology as a research method, the process of reflexive enquiry can be adopted in narrative career counselling to aid the outcome, assessment and intervention of clients. He argues that autoethnography should be admitted to the methodological repertoire of methods of vocational psychology research and practice as this could help provide greater insight into the psychological phenomena of cases investigated.

Besides explorations of the method within academic disciplines, there are also studies that are aimed at sharing certain lived experiences by the autoethnographer, the purpose of which is to explore their own identity and participants' experiences while conducting a specific research within a socio-cultural context. Such studies also have a way of influencing the research process (Ellis & Bochner, 2000). O'Neil (2018) for example, in his article explored the ways autoethnography contributes towards professional development practices in a mentor/mentee relationship. In the article, the author uses reflexive practice to provide deep insight into his personal experience as a supervisor, as well as the experiences of the group of mini-dissertation supervisors and the students being supervised. He observes that being an insider in the inquiry process enabled a deep understanding of himself as the researcher as well as a deeper interaction of his professional context. He concludes that the applicability of autoethnographic methods to professional development practice lies in its transformative power by which it is able to impact how learning is transferred between mentor and mentee to the workplace.

Similarly, Lucero (2018) in an interesting personal narrative, presents an autoethnographic account of living without a mobile phone, the essence of which was to assess the real impact on his life. In an age of the pervasive nature of technology and where mobile connectivity is tied to our identity and experience of living in the information society, Lucero's (2018) study inspires deep reflection on how access to technology in daily life has become a dominant culture in various societies and also underlines how some of the challenges faced by people who are involuntarily disconnected from communication infrastructures are increasingly taken for granted. His study was thus able to illustrate an important aspect of daily living in a way that is familiar to both insiders and outsiders within a sociocultural context.

Within this same context of autoethnographic research, it is noted that some of the literature include studies that centre on issues of a sensitive nature or taboo subjects such as sexual harassment, gender-based violence and bullying which touch private sensitivities of life considered unacceptable in other methodological research methods (Douglas & Carless, 2013; Qutoshi, 2015). Outcomes from such studies have enabled expository analysis of stigmatization, marginalization and inequality thereby facilitating research in under-explored areas of personal experiences in diverse sociocultural contexts. Despite the ethical challenges that could be encountered in such studies particularly in HEIs, Qutoshi (2015) argues that such autoethnographic studies can be considered as emancipatory tools for knowledge sharing which are important in addressing inequalities in societies by developing capacities and awareness at both personal and societal levels.



Autoethnographic studies that are of a sensitive nature using the evocative approach support the view of the method as a postmodernist construct in which the methods and procedures that are employed in research are ultimately and inextricably tied to the values and subjectivities of the researcher (Bochner, 2000; Qutoshi, 2015). Ellis and Bochner (2000) define this as “...an autobiographical genre of writing that displays multiple layers of consciousness, connecting the personal to the cultural” (p. 739). The interconnection of the researcher to the research enables a kind of critical self-reflection on past and present experiences which is considered as one of the most powerful features of autoethnography in facilitating transformative learning (Sykes, 2014). It also supports the argument of postmodernists who see autoethnography as an emancipatory discourse that allows researchers to explore, express and represent themselves through personal narratives, experiences and opinions in ways that are not possible with other methodological tools (Van Maanen, 1988; Richards, 2008; Méndez, 2013).

In HEIs, the legitimacy of autoethnography as a research method is still a deeply contested issue among academics, changes in research trends within disciplines are however influencing a gradual interest in autoethnographic methods. A number of disciplines including anthropology, sociology, education and mass communication are adopting autoethnographic methods in research to explore aspects of transformative learning as a tool to encourage learners to share and explore the complexity of self and social phenomena (Reed-Danahay, 1997; Ellis & Bochner, 2000; Anderson, 2006; Etherington, 2006; Allen-Collins & Hockey, 2008; Roth, 2009). In HEIs, because decisions on academic research processes are often governed by institutional policies, requirements, resources, and other circumstances, regardless of the input or interest of the researcher, autoethnography is often not considered among other “mainstream” methods within qualitative research methods (Campbell, 2016; Lucero, 2018). However, improvements to methodological approaches to autoethnography especially with respect to the extent to which implications for practice could be drawn from research outcomes are likely to inform future considerations to its acceptance in academic disciplines in HEIs (Wall, 2008).

## **AUTOETHNOGRAPHY: ISSUES, CONTROVERSIES AND PROBLEMS**

The discourse around autoethnography as a qualitative research method of inquiry is one that has generated a lot of debate which in itself represent a broad spectrum of views. The arguments may be summarised as showing that quite a number of articles have been written which are either in support of, conflict with or refute the main issues surrounding the method. In this section, an analysis of some of the major contending issues surrounding the debate, mainly issues of ethics, evaluative criteria and self-reflexivity will help in putting these views in perspective and perhaps contribute to the discourse.

Qualitative research method is well accepted as a valuable practice of research; its ability to employ a variety of methods by which the issues under investigation are examined from the experiences of individual participants implies its humanistic stance (Merriam, 2002; Creswell, 2009). Autoethnography has developed within the broad frame of qualitative research methods and is becoming increasingly popular in the social sciences. The following are some of the issues, controversies and problems that have been associated with autoethnography as a method in qualitative research:

## **Reflexivity: Autoethnographic Writing Style**

Among the prominent areas of criticism is the writing style of autoethnography which employs the established qualitative method of using personal narratives to explore wider sociocultural issues. By placing the researchers' own experience as central and the sole source of data for the research, autoethnographic writers aim to produce a narrative that is meant to evoke cognitive, emotional, and physical reactions in the reader. However, this emphasis on the individual experience of the writer has been described by critics as subjective, self-indulgent, narcissistic and akin to navel-gazing (Atkinson, 1997; Coffey, 1999; Allen-Collinson, & Hockey 2008; Lucero, 2018).

By its practice, autoethnographic writing style challenges the accepted norm of silent authorship, neutrality and objectivity particularly among social scientists (Holt, 2003; Marechal, 2009). For most autoethnographers, reflexive writing particularly in an evocative approach, enables the right of the writer to tell their truth as experienced. This has however highlighted the issue of a crisis of representation between the researcher and the sociocultural world being studied. Within professional settings too, Denshire (2013) observed that an autoethnographic account using an evocative approach that is written within or against a profession could undermine the dichotomy between personal and professional boundaries. Such criticisms of the non-conformity of autoethnographic writing to conventional academic standards have been long standing and have led to calls for the removal of autoethnography from the lexicon of empirical research methods (Delamont, 2007). To this end, Denzin and Lincoln (2000), affirm that autoethnography does not usually make a claim to objectivity because objective reality in itself can never be captured but is rather known through its representations towards understanding a particular phenomenon. Tomaselli (2015) also argues that as opposed to other methods, the practice of self-reflexive inquiry has empowered autoethnographers to challenge the dominance of traditional academic forms of writing and researching and opened up possibilities for the researchers' voice and perspective to be heard (Allen-Collinson, 2013).

## **Unscientific Nature of Autoethnography**

Despite the increasing popularity of autoethnography among the social sciences, the method has also been criticized as being unscientific or exploratory in nature. The argument being that the application of some of the key principles of qualitative research in terms of methodological approaches, that is, review of literature, hypothesis, theory building, collection and analysis of data, are insufficient (Maydell, 2010). Hence, its failure to adequately incorporate established standards of rigorous qualitative research inquiry oppose the very tenets of the field of social sciences to which it claims to belong (Ploder & Stadlbauer, 2016). Similarly, the context of self-examination by which data is obtained in autoethnography typifies more to realist ethnographic practices rather than those of the social sciences (Ellis, 2009). Essentially, the categorization of autoethnography as a blurred genre limits its scientific potential among other disciplines particularly the social sciences. However, Ellingson and Ellis (2008) argue that the inability to place autoethnography within the boundaries of art or science, enhances the creative and flexible nature of its methodological approaches in ways that suit the needs of its authors (Richardson, 2000).

## **Lack of Evaluative Criteria**

Debates concerning the methodological approach to autoethnography have also been aimed at questioning the evaluative criteria to be employed in judging its academic rigour in line with other forms of qualitative research methods. Traditional criteria in qualitative research are used for evaluating and interpreting such terms as validity, reliability and objectivity (Holt, 2003). In autoethnography, the highly personalized approach of using experience as data is considered lacking in external verification and therefore not sufficiently rigorous to be accepted by other researchers. Walford (2004) observes that doubtful questions to the credibility of autoethnography as scholarly academic research is contested on the grounds that the authors' own individualized interpretation of an account or situation which is written in an emotional, engaging, and evocative manner cannot be measured against any standard evaluative criteria in qualitative research.

The question of the failure of autoethnography to meet an evaluative criteria is also aligned to the absence of a systematic method of analysis and theory building processes that could produce results that are measurable against traditional quality criteria. The scientific standards of most disciplines require the articulation of clear theoretical positions or analytical concepts for evaluative purposes. Critics in the social sciences argue that because autoethnographic research methods are neither theory-forming nor argumentative and cannot be used as reference texts for a particular theoretical position or analytical concept, they do not live up to the scientific standards of their discipline nor of any other academic discipline (Ploder & Stadlbauer, 2016).

However, Ploder and Stadlbauer (2016) also argued that because the goal of autoethnography is not to represent acquired lessons/experiences but to trigger cognitive processes within the recipients, the value of the use of personal narrative as data is not aimed at arriving at results or findings but rather the positive impact that it is likely to have on the reader. They further argued that reliability and validity in autoethnographic research is established through the credibility of the narrator in providing an honest and reliable account of the work (Starr, 2010). Adams and Manning (2015a) also suggest two essential qualities that should be reflected in all autoethnography projects: Firstly, it should include personal experience and demonstrate through thoughtful analysis why the experience is meaningful and culturally significant and that such experience must be reflexively considered through the use of extant theory, other scholarly writings about the topic, fieldwork observations, analysis of artifacts (e.g., photographs), and/or involvement with others (e.g., interviews). In this regard, Chang (2008, p. 54) cautions researchers on some of the pitfalls to be avoided in doing autoethnography which include:

1. Excessive focus on self in isolation from others
2. Overemphasis on narration rather than analysis and cultural interpretation
3. Exclusive reliance on personal memory and recalling as a data source
4. Negligence of ethical standards regarding others in self-narratives and
5. Inappropriate application of the label Autoethnography

## **Lack of Ethics**

The most scathing criticisms of autoethnographic method is directed at concerns relating to ethical issues (Delmont, 2007). The trend toward evocative writing in autoethnography has increased the risk of autoethnographers sharing stories that are intended to be emotive, detailed and confessional in nature.

Hence the often-cited challenge in writing autoethnography by researchers is that of telling their stories in the light of representing others particularly in aspects relating to stories of pain, betrayal, trauma, unpopular opinions, unconventional activities, family drama, and similar factors which may include other actors such as parents, siblings, or colleagues (Roth, 2009). Consequently, the extent to which the researcher could be openly narrative about sensitive personal issues present the risk of self-exposure to uncertain outcomes for the writer as well as other characters/actors in the research which leads to ethical challenges (Dashper, 2015; Tullis, 2013).

In all academic disciplines, ethical considerations are important in ensuring the quality of research and to serve as guiding principles to the researcher. Conventional practice in academic research emphasize the obligation of researchers to clearly identify ethical decisions shaping the research design, methodology, analysis and confidentiality agreements. The informed consent and rights of other people involved in the research are specifically considered vital because of the far reaching consequences research outcomes are likely to have on the parties involved. The role of ethics is not well explored in autoethnography, critics have noted that the difficulty in protecting the privacy of others is also not well articulated in its methodology (Chang, 2008; Delamont, 2009; Tolich, 2010).

In HEIs specifically, primary concerns as discussed in the literature focus on the challenges of practicing autoethnography ethically particularly in relation to issues of accountability and the risk of self-disclosure which is seen as being contrary to established norms of academic research (Wall, 2008). As the field emerges, the controversies surrounding ethics in the practice of autoethnography is expanding beyond the procedural ethics of obtaining approval from ethics boards to relational and moral ethics which in turn underscore the responsibility of autoethnographers in considering the characters or actors included in their personal narrative accounts (Ellis, 2007). Despite the argument by Ellis (2007) that autoethnography is in itself an ethical practice which entails being ethical and honest about the events described as well as the content of words expressed by all the people involved in the narrative event, it is seen that leading proponents of autoethnography as a qualitative research method must provide better insight into the ethical boundaries that should be anticipated between the self and others in its practical application.

Autoethnographic methods highlight the value of personal experience, the use of it as a source of data has consistently blurred the lines between the subject and the researcher particularly in its methodological approach. With the emerging nature of autoethnography as a field of research, further considerations need to be given to these criticisms against its methodological approaches in line with the review and evaluative criteria of other forms of qualitative research methods.

## **AUTOETHNOGRAPHY AND INFORMATION SCIENCE RESEARCH**

Like other social sciences, methodological approaches in information science are rooted in the traditions of positivism and empiricism. In the use and application of qualitative research methods, information science is also not divergent to other academic disciplines. The adoption and use of personal narratives in information science research and other social sciences has not been the norm, however in recent years, the use of autoethnography has provided a methodological justification for using reflexive approaches in academic research (Burnier 2006). Using the research questions of the study, this section analyses current engagement of information science research with autoethnographic methods. It examines the applicability of autoethnography to specific fields of information science and the ways in which it can be

adopted for knowledge sharing. It also provides insights on how autoethnographic methods can be used to advance transformative scientific research for the generation and sharing of knowledge in information science and the challenges (or fallacies) to be encountered in qualitative research.

### **What Constitutes Autoethnography in the Current Practice of Information Science Research?**

According to Deitering (2017), a considerable amount of literature on library and information science research tend to focus more on providing information on well-known service areas such as reference services, information literacy instruction, collection development and preservation. A current challenge to this context is a redirection towards investigating the activities of librarians as actors in the sphere of information services provision, the purpose of which is to better understand the various roles they play and to improve professional practice (Polkinghorne, 2012; Guzik, 2013).

Reflexive methodological approaches through autoethnography provide a framework by which unique aspects of professional services by librarians in information science can be investigated. Through autoethnographic methods for example, Phillips (2016) identified an empathetic side to librarian/client relationship through services provided to cyberbullied young adults in a rural public library. Similarly, a unique perspective on library disasters is well captured in Patin's (2015) personal narrative on the impact and effect of Hurricane Katrina on her community college library. Such studies on librarians' responses to disadvantaged groups or crisis interventions that are not only focused on rebuilding library structures and resources but encouraging community engagement provide a good balance between personal experiences and relevant professional literature (Deitering, 2017). This ability to explore narratives about personal experience within a professional context constitute a distinct perspective on the value of autoethnographic methods in current information science research.

In practical application, aspects of library services that could be explored using autoethnography as a method include such areas as collection development. Collection development in libraries is aimed at ensuring that quality resources are acquired for current use in both print and electronic resources in order to meet the needs of clientele. It provides information to clients about the nature, form and availability of resources (Mullen, 2011). In the digital information era, collection development constitutes a major challenge, autoethnography can be employed to express some of the difficulties experienced by librarians in providing access to quality information resources. This can provide an understanding to clients of the situated context of the challenges faced and the options that can be explored (Deitering, 2017). Similarly, in aspects related to reference services and information literacy instruction, autoethnography can be used to share the experiences of librarians in implementing information literacy programmes (Fister, 2011; Polkinghorne, 2012).

### **How Can Autoethnography be Effectively Adopted for Knowledge Sharing in Information Science Research and Practice?**

Autoethnographic writing styles aimed at investigating professional experiences in interacting with information sources are gaining much ground in information science. Research using the evocative approach, characterized by its use of innovative textual formats such as poems, essays, articles, short stories, dialogues, comics and novels, was employed in Michel's (2010) study. The study which reflected his personal experience as a student at an academic library over the course of one year of PhD study, used

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an autoethnographic method in which reflections on the data were presented in the form of 3 two-minute video clips narrated with accompanying poems. Michel (2010) demonstrated autoethnography as a useful method for information scholars who seek to examine, analyze, and interpret various information phenomena and who aim to improve human information experiences (Guzik, 2013; Gorichanaz, 2017).

The analytical approach to autoethnography as expounded by Anderson (2006) was also employed in the study by Wheeler, Graebner, Skelton and Patterson (2014) in which they were able to link theory and literature to their experiences and construct their identity in a library environment undergoing transition. Thus as a technique, tool or means for self-examination, the ability for self-reflexivity using the two divergent approaches in autoethnography can offer more opportunities to be used to research literature and analyze experience in ways that encourage creativity and knowledge sharing. Consequently, despite the polarization of perspectives on the two approaches, active engagement with autoethnography by professionals in information science has the potential to enrich research practices in terms of data collection, analysis and interpretation of research in information science.

### **Which Fields of Information Science is Autoethnography Applicable?**

One importance of autoethnography is the provision of a methodology for narrative approaches which is valuable for research in information science. This is because it affords the opportunity for information professionals to study experiences of information use in-context in the different fields of library and information science such as knowledge management, information literacy, preservation and archives as well as reference services. Similarly, within the context of an increasingly digital information environment, autoethnographic approaches are suitable for investigating emerging digital systems used in library and information services (O’Riordan, 2014). In this regard, Michel (2010) argues that autoethnography can inform librarians’ conceptualizations of user services in the area of human-computer interaction, studies on public libraries, government records and information policy development to help information experiences of students, faculty, and other individuals who use resources and services provided by information institutions such as libraries and archives.

Studies in information behaviour are also exploring the use of autoethnography for investigating specialized information needs of users. Ngula’s (2018) study on the information needs of people with albinism (PWA) employed aspects of autoethnography by which she was able to relieve personal experiences of the condition and in this way provide empirical data that can inform strategies for intervention for people living with the condition. Autoethnography thus has the potential for novel application to the various fields of information science particularly in under-examined areas in ways that can inform professional practice for the future (Guzik 2013; Gorichanaz, 2017).

### **How Does Autoethnography Advance Multidisciplinary or Trans-Disciplinary Research in Information Science?**

Autoethnography can also be used to encourage collaborative research across disciplines particularly in HEIs. This practice involves the use of collaborative approaches to writing, sharing, and analyzing stories of personal experience (Allen-Collinson & Hockey, 2008; Denshire, 2013; Lapadat, 2009). Models of such collaborations can be done fully or partially at various stages of the research such as writing, data collection and analysis, either of which can be undertaken sequentially or concurrently between researchers (Blalock & Akehi, 2018). According to Denshire (2013), collaborative research is a distinct

feature of autoethnographic methods and creates a path towards advancing multi-disciplinary research in ways that encourage information sharing across disciplines.

Methodological approaches to collaboration in autoethnography is reflected in the work of Ngunjiri, Hernandez and Chang (2010) in which they noted that the collaborative processes employed facilitated a transformative process by which they were able to create community, advance scholarship and effect changes at their institution. Similarly, Anderson and Fourie (2015) in their study which explored the value of understanding information engagements and practices in the lives of family care-givers, observed that collaborative autoethnography helped enrich their understanding of the embedded, contextual character of information practices as they unfold in the midst of illness or care giving. Collaboration through co-conducted autoethnographic research by two or more researchers across disciplines are therefore seen to produce greater interaction and richer perspectives in ways that inform professional practice in information science than those of solo researchers.

### **What Specific Challenges are Experienced in the use of Autoethnography as a Research Method in Information Science Research?**

Researchers writing autoethnography have often been confronted with certain challenges associated with its methodology and like with other disciplines, these challenges may not be peculiar with information science. A reoccurring theme in the criticism of doing autoethnography is the strong emphasis on self where the researcher plays the multiple roles of author, informant, and researcher (Chang, 2008). In this context, there is always the tendency to stress narrative over analysis and interpretation especially when using the evocative approach (Chang, 2008; Anderson & Fourie, 2015). The challenge for information scientists in using the two methodological approaches therefore is to maintain a balanced perspective in ways that reflect the true purpose of the research (Wall, 2016). Similarly, Lucero (2018), suggests that well-crafted autoethnographic writing should be emotionally engaging as well as critically self-reflexive of the researcher's sociopolitical interactivity in order to elicit positive insights for the reader.

Lack of clarity in the evaluative criteria of methodological approaches to autoethnography can also be said to account for its underutilization in information science. Information science research maintains a traditional quality criteria by which the application of a systematic approach in undertaking qualitative research methods is ensured for methodological transparency in the research process (Guzik, 2013). Consequently, limitations as to the adequacy of rigorous external verification processes in autoethnography constitute a major challenge. Similarly, other considerations on the impact of ethics on research outcomes will need to be addressed by authors particularly for studies undertaken that are likely to affect the efficiency of institutions such as libraries and archives.

Challenges of evaluative criteria is also closely associated with the question of acceptability by reviewers and publishers of research articles by information scientists. Researchers undertaking autoethnographic studies particularly within HEIs, have consistently indicated the reluctance by their research/ethics boards to accept the validity of their studies (Wall, 2008; Dashper, 2015). Such challenges have also been identified with some publishers and reviewers with a more rigid stance on research quality and who do not regard autoethnography as scholarly work (Sparkes, 2000; Holt, 2003; Allen-Collins & Hockey, 2008; Delamont, 2009). In this regard, it has become necessary that as methodological approaches in autoethnography gain more interest in information science, acceptable evaluative criteria should be developed by experts within the field to address such anticipated challenges.

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From the foregoing review of the literature and analysis relating to information science research, it is seen that the literature of autoethnography within qualitative research methodology is evolving. The changing trends of scholarship with the increasing interest of its applicability in HEIs are the most likely factors to influence its implementation across various disciplines and information science in particular. Similarly, despite these challenges, future advances in postmodernism will also enhance the adoption of autoethnography as a powerful methodological tool in qualitative research methods.

## **RECOMMENDATIONS**

Unlike other forms of educational research, autoethnography has provided an alternative approach to traditional qualitative research methods by its varied nature and postmodernist perspective. The dimensions of the issues regarding its legitimacy as a method are in many ways contributing to refining its relevance as a methodology, this is seen by the various apologetics written in support of autoethnography by its proponents which is also helping to close the gap in the literature of qualitative research methods. This section provides recommendations on the prospects of the application of autoethnography to research in information science.

Reflexivity has long been accepted as a qualitative process by which researchers validate and question research practices. Its use in autoethnography is viewed as a criterion which provides researchers with a forum for expressing the awareness of their integral connection to the research context (Spry, 2001; Huang, 2015; Hughes & Pennington, 2017; Palaganas, Sanchez, Molintas, & Caricativo, 2017). This ability of the researcher to narrate their lived experiences in ways that connect with others is seen to represent a critical intervention in the social, political and cultural life of people (Wall, 2006). Chang (2008) also maintains that the contextual value of the practice of reflexivity is that it enables the researcher to identify with a community or multiple communities, in an effort to synthesize a localized perspective. In practice, reflexivity demands a considerable amount of courage in the researcher's ability to look inward with radical honesty and explore the self in order to better understand others. In this regard, Johnson (2011) argues that unlike autobiographies, reflexivity through autoethnography provides the opportunity for the personal experiences of ordinary non-celebrated people to be researched within the collective experience of a larger community of people thereby promoting positive social change.

The debate on the absence of an evaluative criteria in autoethnography are based on the general complexities and context of qualitative research methods which makes it requisite for researchers to clearly describe how issues of research design and methods are explored in a study. Arguments in defence of autoethnography have sought to offer suggestions for developing an evaluative criteria for the legitimization of the method. Hughes and Pennington (2017) in their work, identified the following three distinct approaches by which autoethnographic research method can be legitimized, they include:

1. **Claiming links to existing qualitative constructs:** By this approach, autoethnographic researchers are expected to link their study with key qualitative research requirements or criteria that are already in use and well known to members of the qualitative research community thereby legitimizing its processes (Guba & Lincoln, 1985).
2. **Linking with traditional qualitative methodology:** This approach identifies with existing traditional qualitative methods and also aligns with earlier recommendations by Anderson (2006) on analytic autoethnography. Anderson (2006, p. 378) proposes and describes five key features of analytic



autoethnography in an effort to legitimize it as a “viable and valuable” sub-genre in the realist ethnographic tradition. In this approach, he identifies the following features:

- a. The researcher is a complete member of the social event under study.
- b. There is awareness of the researcher’s connection to the situation under investigation and their impact on it (analytic reflexivity).
- c. There is visibility of the researcher’s own experiences.
- d. There is dialogue with informants beyond the self.
- e. There is commitment to theoretical analysis requiring not simply the documented experience of the event but also to provide some broader understanding of the situation under investigation.

This approach is specifically linked to analytic autoethnography and is committed to the possibility of using empirical data and developing theoretical explanations of broader social phenomena rather than focusing on narrative presentations that evoke emotional responses (Chang, 2008; Atkinson, 2006).

3. Claiming links to established professional associations and standards: In this approach, Hugh and Pennington (2017) advocate the involvement of professional associations to legitimize autoethnographic methods by endorsing autoethnography as a valid method of empirical research particularly to HEIs, ethical boards, editors and reviewers. In addition to these three approaches, Hugh and Pennington (2017) also argued that the determination of autoethnographic researchers to remain adamant about its possibilities and strengths is a key step to legitimizing its processes especially with respect to issues of evaluative criteria.

In the effort to ensure that autoethnography does not remain within the peripheral leanings of the social sciences, issues in contention against its methodological approaches are gradually being addressed as seen from contributions by its strongest advocates who have sought to establish its legitimacy as a valid method of qualitative research (Adams, Jones & Ellis, 2015). Furthermore, it’s potential to incorporate postmodernist views is serving to facilitate emancipatory discourses on controversial topics that are difficult to express through other research methods particularly in HEIs (Wall, 2006). Consequently, the identified approaches can be effectively adopted in the application of autoethnography to research in information science.

## **FUTURE RESEARCH DIRECTIONS OF AUTOETHNOGRAPHY IN INFORMATION SCIENCE RESEARCH**

As a qualitative method, autoethnography is a narrative research which recognises that stories can be used to enable people make sense of themselves and their inter-relationship with the social world. Autoethnography is a process of social construction and it is an attempt to create order and meaning out of events, issues and actions that are somehow surprising or confusing. Thus sense making is used to describe the process in which people try to make sense of ambiguous situations (Helms Mills, 2010). The narratives that emerge out of autoethnography are not mere accounts but intended to show struggles and passion of the circumstances experienced by the writer. Thus the use of compelling images such as vignettes, poetry, and other forms of aesthetics in the narrative are meant to evoke emotions of empathy in the reader to enable them make sense of their own experiences (Ellis & Bochner, 2006). As a method,

autoethnography can therefore provide a rich and nuanced understanding of the complexities of the social world to the reader and how it shapes their own identities. This particular feature in autoethnographic writing is viewed as facilitating a kind of logical reasoning of the different ways people make sense of their situations (Adams, & Manning, 2015b).

The application and development of theory in autoethnography has been very much debated however, the viability of theoretical development with respect to its application in information science research can be considered through Brenda Dervin's sense-making theory (1998). Sense-making is a theory of communication practice and a research methodology, it is an approach that is grounded in constructivist learning theories and emphasizes solving problems through real actions. Sense-making comprises a set of philosophical assumptions, propositions, methodologies and methods (Dervin 1998). It assumes life in a world of gaps which change across time and space, and depend on a person's past, present and future (Dervin 1998). The theory assumes there are gaps between entities, time, and spaces, and that each individual moves through space with other entities i.e. people, artifacts, systems and institutions. The theory is seen to set out a general motivation for information seeking behaviour and can be used to find out what people really think, feel, want and dream (Wilson, 1997).

Few studies in autoethnography such as McIlveen, (2008) and Wall (2016), have been able to include theoretical elements in ways that contribute to theory building. According to Anderson (2006), by merging theory with the ethnographic understanding of a social phenomenon, the analytic approach in particular provides an avenue for theory building in autoethnography. Consequently, it is suggested that the prospect of the application of Dervin's (1998) Sense-making theory can be considered viable in investigating aspects of information science through autoethnography, particularly research in human information behaviour (Helms Mills, 2010; Allen, 2015).

In the same vein, it is seen that personal narratives that emerge through the application of evocative autoethnography are seen to capture the affective dimension by which a reader can easily identify with. This aspect is reflected in the work of Anderson and Fourie (2014), Ploder and Stadlbauer (2016) and Bødker, and Chamberlain, (2016). In this regard, Kuhlthau's Information Search Process (ISP) model (1993) is also viable for application in autoethnographic research in LIS research. The model which encompasses the three realms of activity, that is, the physical, the affective and the cognitive, can be explored as a way of expressing personal experience in relation to social issues.

Hence in the context of the topic of this chapter and with respect to current developments in qualitative research methods, the possibility of the application of this theory and model to autoethnographic research in relation to information science is suggested and should be explored more intensely in future research.

## **CONCLUSION**

This chapter aimed to investigate the use of autoethnography as a qualitative research method in information science research, it has provided an in-depth understanding of the methodological importance of autoethnography and its value for knowledge sharing. Knowledge sharing in information science constitute the voluntary transfer of information between persons, organisations or entities. The purpose of which is to contribute to the continuity of information dissemination and foster the development of shared awareness, understanding and experience among people or organisations (Pilerot, 2012). One of the unique qualities of autoethnography is its transformative ability to bring about positive social change through access to textual information (Denzin, 2000; Bochner, 2000). The overview of the history,

methodological approaches and orientations of autoethnography as discussed in this chapter, illustrate its value as a method that helps people make sense of their experiences and, in so doing, provide guidance for others. From the analyses of the literature and research questions in the chapter, this potential of the autoethnographic method to explore the complexity of the self in relation to social phenomena is seen to fully serve the purpose of transformative generation and knowledge sharing in information science.

Within the current context of information science research, emerging studies are showing that critical self-reflection which is an important component of self-development is serving to effect improvement in practice by facilitating a constant engagement between the individual and his or her professional context. As the scope of information science research expands and with the increasing interest in postmodernist views against conventional methods of qualitative research, autoethnography presents a new opportunity for information scientists to explore more innovative ways of understanding human information behaviour in professional practice. The analysis of the literature reviewed in relation to information science have also demonstrated the value of the methodological approaches of autoethnography by which information professionals can better engage with this method of qualitative research to develop a better understanding of the research opportunities it provides.

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## **KEY TERMS AND DEFINITIONS**

**Analytic:** A logical, systematic way of reasoning in understanding or examining an issue.

**Ethics:** The principles of right and wrong that accepted by an individual or social group based on established standards.

**Evaluative:** A process of assessing or appraising the value of something in order to determine its worth or significance.

**Evocative:** A statement or action that is made to induce an emotional response.

**Postmodernism:** A theory or movement that challenges a reconsideration of modern assumptions of culture, identity, history, and research.

**Reflexivity:** A spontaneous action that is characterized by or done in relation to one's self.

**Transformative:** An action that is capable of bringing about definite change.

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Section 3

# Mixed Methods Research

# Chapter 12

## Designing a PhD Proposal in Mixed Method Research

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### **ABSTRACT**

*This chapter reviews the challenges and advantages of writing a mixed method research (MMR) proposal. The argument put forward is that a mixed method approach overcomes the shortcomings of the commonly used qualitative and quantitative methods. A brief definition of a research proposal is followed by a discussion on the different interpretations of a mixed method and what makes mixed methods ideal in the proposal example that follows. A mixed method can be either one that utilizes qualitative and quantitative methods to different degrees or it can be regarded as a distinct method by itself. A mixed method is suitable where both different types of data can be collected, when the data adds value to what would be achieved using one approach and where cost also justifies it. A hypothetical case example where an application is being made to conduct an evaluation of an anti-truancy program is presented.*

### **DEFINING A RESEARCH PROPOSAL**

A PhD, or doctor of philosophy, research proposal is a document written by a research scholar outlining ideas of an investigation they propose to carry out during their candidature. It should describe the process from the beginning to the end, including any experiments and financial outlays, before their candidature can be confirmed. A PhD is the highest academic qualification and therefore the proposal should demonstrate that the research will generate either new knowledge, products or new approaches to professional practice. A research proposal is an important part of the research process, whether for a dissertation or funding application by an experienced researcher. It presents a comprehensive plan for your research design to answer your research question or questions (Kumar, 1996). The function of the proposal then is to outline what your research is about and the method you intend to apply (Bryman, 2016). Alston and Bowles (2018) describe the proposal as a road map that anyone can follow to see how the research will be conducted and that the researcher has the right skills and is following an appropriate methodology.

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A review of the relevant literature is a critical part of the proposal. This includes the key studies or authors on the topic (Bryman, 2016). The literature review should include the current state of knowledge and the gaps in knowledge and whether that is related to conceptual or methodological limitations (Kumar, 1996). The review therefore helps to establish the need for the proposed research and locates it within the existing literature. After establishing the gap in knowledge the challenge becomes one of formulating the research question to be answered in order to close the identified gap in knowledge. The research question is absolutely critical because it helps you to narrow the focus of your research and identify what literature you need to search and what data you need to collect. Bryman (2016) identifies seven reasons why research questions are critical and argues that they will:

- Guide your literature search
- Guide your decision about the kind of research design to employ
- Guide your decision about what data to collect and from whom
- Guide your analysis of the data
- Stop you from going off in unnecessary directions; and
- Provide your readers with a clearer sense of what your research is about. (Bryman, 2016, p.9).

The structure of your research question will also indicate whether you aim to test relationships or broaden understanding of an issue. Therefore, the research question will indicate what the most appropriate methodology is likely to be.

There are several factors that determine the research methodology or design. Alston and Bowles (2018) suggest that the choice of methodology depends on: the purpose of your research or study; your own skills; background and beliefs you hold about research; the stated needs or the agenda of the funding or commissioning institution; the accessibility of participants or secondary data and; the perspectives of people or programs you wish to study. Whatever choice you make; you have to provide a detailed description and justification of what you intend to do. The MMR does not have specific steps to follow in its design. As explained below, different MMR researchers will approach the design in a variety of ways. It is generally expected that a well described design means that if someone else was to follow the described procedure they will conduct the research in the same way as you would. A poor design is sketchy and difficult to follow with some gaps on how to proceed.

## **QUANTITATIVE, QUALITATIVE AND MIXED RESEARCH ALTERNATIVES**

Research involves accumulation of information and attempting to make sense of it. This is done by imposing or identifying patterns in the accumulated information or data. Depending on the type of data, the purpose and your inclination as a researcher, the three key methods used are quantitative, qualitative and mixed methods.

The quantitative research methods are the dominant and oldest ones and originated from the natural sciences. The quantitative methods of choice include surveys, questionnaires and structured observations (Alston and Bowles, 2018). Quantitative research is concerned with measurement, establishing relationships, generalization and replication (Bryman, 2016). The key strength of the quantitative methods is therefore the use of statistics in order to generalise from small representative samples to large populations. However, quantitative research methods are criticised for equating the social world with the natural

## ***Designing a PhD Proposal in Mixed Method Research***

world and hence overlooking the fact that people ascribe meaning to their lived experiences (Bryman, 2016). The criticism has given rise to qualitative research methods.

Qualitative researchers are not concerned with numbers and establishing relationships based on statistics. Instead, they are concerned with understanding how the subjects of the research experience life, what particular social phenomena mean to them and from that they develop or deepen understanding (Alston & Bowles, 2018). Qualitative researchers therefore emphasise the viewpoints of research participants, careful description and identification of context, transparency of process, flexibility and lack of a universal structure and concepts and theories as the outcomes of the research process (Bryman, 2016). Qualitative methods are criticised, mainly by quantitative researchers, for being too subjective by depending on the researchers' views, skills and relationships with participants. A popular approach in qualitative research is ethnographic research which originates in anthropology and studies a whole culture of a group or organization, rather than focusing on individuals (Angrosino, 2007). Quantitative researchers also point out that findings in qualitative researchers do not aim at generalization as they don't employ representative samples. Qualitative research processes are also claimed to lack transparency in terms of participant selection and data analysis (Bryman, 2016). While these criticisms are based on understanding research from a quantitative perspective, they have given rise to a third alternative, which is mixed method research or MMR.

Mixed method research can be seen to be the use of either of the two established method to supplement the other one or as a method in its own right. While combining different methods in research has existed for a long time, mixed method as distinct method came into prominence in late 1980s and early 1990s (Creswell, 2014). The overall aim of using mixed methods is to overcome the limitations of the other two major methods when used on their own and to approach the question from different theoretical perspectives. The justification for using a mixed method research is that it provides an advanced and comprehensive methods to handle both qualitative and quantitative data (Creswell, 2014). The major weakness is that it could be more time consuming and may fail to go into the level of details that using qualitative or quantitative methods alone may achieve. Another challenge is that the purists of either ontological (ways of knowing the world) approaches represented by qualitative and quantitative methods may not be convinced. This later issue is weakening as both approaches acknowledge their limitations. The underpinning philosophical assumption then for MMR then could be argued as presenting an approach that overcomes the deficits inherent in both qualitative and quantitative research methods.

Used for supplementary purposes, the MMR has a dominant-less dominant model where either qualitative or quantitative method is dominant and is supplemented by the other one as the less dominant one (Grinnell, 1997). This approach is sometimes referred at as 'mixed methods lite' (Green, 2012, p.758). In this situation, a research that is theoretically driven by the quantitative method will use a smaller component of qualitative research to add value to the mainly quantitative research project. The quantitative research will, for example, use surveys to collect generalizable statistical data and supplement this with a case study or several case studies for further illustration. A predominantly qualitative research in MMR will supplement the narrative account with limited statistical data to collaborate the findings. When the use of multiple methods is in studying a social phenomenon for cross-checking purposes then it is referred to as triangulation (McNeill & Chapman, 2005). In this mixed 'method lite' the research retains the ontology and epistemology of the dominant method.

Used as a method in its own right, the MMR has been referred to as 'mixed method heavy'. In this case MMR does not restrict itself in either qualitative or quantitative method but instead 'involves mixing at all three levels of method, methodology, and paradigm/ mental model' (Green, 2012, p.758). The objec-

tive is to bridge the divide between the two traditional dominant methods and accommodate diversity in viewpoints of researchers, participants, and theories. MMR does not have a uniform approach to research and allows for variation depending on the research objectives as well as the researchers' philosophical orientation. Four different common orientations or paradigms have been identified as pragmatic, transformative-emancipatory, dialectics and critical realism (Shannon-Baker, 2016). The pragmatism is more concerned with research questions and transferability of research findings; transformative-emancipatory research is more concerned with research relating to liberation of oppressed groups; a dialectic research is interested in creating bridges for divergent ideas, data sets and theories and finally; a critical-realism orientation establishes commonalities between qualitative and quantitative methods to locate causal relationships both in context and generalizable situations (Shannon-Baker, 2016).

A different approach to understanding MMR is based on how qualitative and quantitative methods are combined. Creswell (2014), using this criterion identifies three main types as convergent mixed method design, explanatory sequential mixed methods designs and exploratory sequential mixed methods designs. Convergent designs collect and analyse qualitative and quantitative data separately to check if they confirm each other, explanatory sequential mixed methods use qualitative data to explain what is observed in quantitative data while exploratory sequential is a reversal of this and uses qualitative data to build on the case already established by quantitative data analysis.

An MMR approach is not suitable to all situations and it is therefore important to evaluate the suitability before settling for the method. What it offers is the possibility of handling both qualitative and quantitative data, respectfully engages in the diverse ways of knowing and different perspectives in order to make sense of human experiences and phenomena (Green, 2012). Rather than take a fixed position on research approaches, MMR allows for dialogue among them in order to deepen understanding.

The next section presents an example of research proposal that aims to use MMR to evaluate program quality and effectiveness. The evaluation process normally employs different research approaches and is ideal to demonstrate the use of MMR. In this example both qualitative and quantitative research methods are given equal weights and would therefore be describe as MMR heavy. The city and the country are both imaginary locations but the problems described are typical of inner urban areas of modern cities in both global west and east, though more reflective of western cities.

## **AN EVALUATION STUDY OF THE ANTI-TRUANCY STUDY IN ZAMBA CITY USING MIXED METHOD RESEARCH**

### **Introduction**

The aim of this research is to evaluate the Anti-Truancy Program in Zamba city that is funded by the Federal Government as a pilot project with a potential for being rolled out to the rest of the country. The objective of this proposed research project is to evaluate the quality and effectiveness of the program as it has been implemented over a period of five years. The expected outcome is recommendation on whether to:

- Expand the program as it is to other cities and regions or
- Modify critical aspects before taking it further or
- Abandon the program if it is not achieving its stated objectives.

## ***Designing a PhD Proposal in Mixed Method Research***

The Anti-Truancy Program was set up to address the growing concerns about truancy and dropping out of schools in the country. The Department of Education decided that it was important to start with one school in order to learn what approaches worked as there was limited information on effective intervention programs. The Zamba academy pilot program provides counselling and support to at-risk students and liaises with students, parents and teachers. The students of concern are mainly young teenagers 13-18 years of age. All the target participants in the program are students attending Zamba Academy, the largest high school in the city with 2,000 students. The school is also in a low income area with high unemployment, youth crime and drug and alcohol use. The stated objectives of the project are:

1. To develop a counselling and support program for students and parents of at-risk students attending Zamba academy.
2. To develop model approaches and resources that could be used by schools and parents/guardians to support at-risk students.

## **Literature Review**

Truancy is understood in this study as absence from school or classroom without the permission of the school or parent/guardian. It has been estimated that hundreds of thousands of students in the United States fail to attend school without any good reason and this problem is associated with problems in school performance and later life experience (Baker, Sigmon and Nugent, 2001). It is therefore critically important to establish the reasons why students avoid school and also develop intervention measures that lead to reduction of truancy. Evaluation research on truancy has identified broad categories of factors that correlate with truancy and they include family circumstances, the school social environment, Social economic factors and individual student's personal attributes (Baker, Sigmon and Nugent, 2001). Research also indicates that involving parents is helpful in addressing truancy and dropping out of school (McNeal Jr, 1999). Truancy and chronic absenteeism are predictors of dropping out of school and behavioural and social problems in later life. While it is important to address all the factors contributing to truancy and absenteeism, poverty and parental factors are identified as the most significant factors and early intervention the best approach to address the problem (Romero & Lee, 2007).

## **The Research Problem**

The government funded program has been in operation for five years and the government needs to have it evaluated to see if it should be rolled out to other cities and schools. In particular, the government needs to know whether the program has been effective in reducing truancy. In addition, the government wants to know how it compares with best practices in the world. More importantly, the government wants to know whether the program has resulted in successful practices that could be replicated in other schools in the country.

It is important to understand truancy and how it could be prevented or at least reduced. The characteristics of successful programs in reducing truancy and its risk factors include parental participation, clear penalties for truancy, clear incentives for school attendance, clear school-based truancy reduction programs and utilisation of available community resources (Baker, Sigmon and Nugent, 2001). These benchmarks will assist in evaluating this program. The information will be useful in determining whether



this program could be replicated in other schools in the country and also add to the knowledge of truancy issues in this country.

## **Research Plan**

The evaluation research is going to utilise a mixed method research (MMR) design and will therefore collect a mixture of qualitative and quantitative methods. This approach will ensure that the evaluation will be able to capture statistical information and also the views and opinions of the students, parents and teachers and the rationale of their respective actions. There are different ways to approach a mixed research design but the one chosen for this project is critical realism that is arguably suited to evaluation research. Shannon-Baker (2016) suggests this approach allows for different types of data and theoretical positions to interact:

*Critical realism can help facilitate dialogue across differences theoretically. It also encourages including insights that are mentally based, such as collecting perception- and reflection-based data. Its emphasis on relationships is connected to its ability to infer causal relationships that are both contextually based and generalizable to others. This perspective has been particularly used in evaluation studies. (p.331).*

The objective then in this proposed research is to understand the particular context of the Zamba academy but also where possible be able to identify what could be applicable to similar schools in the country. MMM allows for different sets of data such as qualitative interviews and subsequent transcripts and quantitative survey data to be collected and different theoretical approaches utilized without the limitations that would apply in an either strictly qualitative or quantitative research design.

## **The Research Question**

For this research the research question is based on what the Department of Education needs to know. There are also other stakeholders including the school community, the project team and other schools. The principle question to be answered is: *Has the program achieved its objectives of reducing truancy and school absenteeism in Zamba academy?*

The sub questions are:

1. What are the various stakeholders (students, teachers, parents and department of education) happy with about the program?
2. What the stakeholders unhappy with about the program?
3. What are the lessons that have been learnt in this pilot program?
4. How does this program compare with similar programs elsewhere?

Hypothesis testing in this situation could be testing the statement that Anti-Truancy Program in Zamba city has been successful in reducing truancy.

## **Data Collection**

As a mixed research study both quantitative and qualitative data will be collected. The quantitative data will consist of:

- Recorded frequency of truancy before and after the program
- Frequency of intervention sessions
- Response opinion survey on usefulness of the program
- Age and gender of participating students
- Reported success and failure rates of the interventions
- Success of intervention compared to non-intervention (control group)

The qualitative data will consist of interviews with the various participants and stakeholders:

- Counsellors in the program (all)
- Student participating in the program (30%)
- Parents of participating students (30%)
- Teachers of participating students (all)
- Department of education officials (all) those directly involved
- Small focus groups interviews with parents and students (not together).

In-depth interviews will focus on what the various key informants think about the program. What they think has worked, did not work and what could be improved. Focus groups are ideal for facilitating dialogue between participants and elicit information that may otherwise not be available through individual interviews (Markova, 2007). In addition to interviews, where possible, material and documents used in the program will be sought and reviewed. The reference materials as well as program plans will be sought and reviewed as well. Diaries and field notes kept by the counsellors will be sought and used with permission. The use of artefacts in this research is to supplement the primary data sources as concrete and tangible evidence. It is quite common in ethnographic studies to study physical objects, memorials and technologies as an important authentic record of what was happening in a given time or place (Markham, 2005). If photographs are used, then permission will be sought to include them in any future publication.

## **Ethical Issues**

Children are considered a vulnerable group in society and therefore any research involving children needs to be evaluated and passed by a competent ethics committee. This research proposal will be submitted to the ethics committee of the Department of Education to ensure it is conducted ethically. Parents will be requested to give written consent before children under 18 are interviewed. The requests will be sent through the school. The researchers are also competent to conduct this research and apply an appropriate methodology. They have appropriate qualifications and experience to conduct mixed method evaluation research. The findings will be communicated to the appropriate authorities.

## **The Research Site**

Zamba academy will be where the interviews will be conducted. The students, parents and teachers will be familiar with the school and hopefully will feel comfortable there. There is the risk that the students might not feel free to be critical of the program in the school especially if they have already left the school. The alternative site is the counselling rooms where the truancy prevention program has been conducting counselling sessions. Participants will be consulted on where they prefer to have the interviews so any concerns about privacy are addressed.

## **Data Analysis**

The quantitative data will be analysed using an appropriate software package, in this case SPSS is useful for analysing data that is suitable for generalisation (Osborne and Costello, 2009). A competent statistician will be engaged to assist in data entry and initial analysis but the interpretation and discussion of the data will be done by the research team consisting of the PhD student, research assistant and supervisors. The qualitative data will be analysed continuously as it is collected for emerging themes. The focus here is on the richness of the truancy issue and how effective the program has been in addressing it from the perspective of the participants and emphasis is on what they feel and why they feel that way (Basit, 2003). To organise this data more systematically NVivo, the software for qualitative data analysis, which facilitates handling large amount of qualitative data, will be used.

It will be crucial to ensure that both qualitative and quantitative data are compared and integrated so that they tell a comprehensive story rather than two parallel stories. The diaries and other artefacts associated with the project will be incorporated into the analysis.

## **Budget**

This evaluation project will be done within the budget in the tender, amounting to \$30,000. It will endeavour to deliver quality evaluation in an efficient and reliable manner. The estimated costs are as shown in Table 1.

*Table 1. Budget estimate*

<b>Item</b>	<b>Cost</b>	<b>Comment</b>
Research personnel	\$20,000.00	\$40/hrx500hrs
Travel	\$5000.00	Car hire
Stationary	\$1000.00	Pens, paper etc.
Statistical software packages	\$1000.00	SPSS & NVivo
Catering	\$1,000.00	Mainly focus groups
Sundry	\$2,000	Recorders, space hire & incidentals.
Total	\$30,000	

## Research Schedule

The research will be a period of six months to allow for ethics application, conduct of interviews and preparing the report.

*Table 2. Research schedule*

Month/Task	January	February	March	April	May	June
Ethics application	←→					
Literature review	←→					
Interviews/data collection			←→			
Data reduction, analysis and integration				←→		
Report writing					←→	

## About the Researchers

The leading researcher, Ndungi wa Mungai is experienced in evaluation and mixed research. A detail curriculum vita is attached and demonstrates his success in previous research. The team is available to present and provide more details on how they intend to conduct the research if required.

## Limitations

The major issue here will be getting the schools to cooperate and provide the data they have on students. It is hoped that since this is a government funded program and the government needs this information they will cooperate. Surveys are also notorious for low response rates and reminders will be sent to remind participants of the value of their participation. Evaluation is often an inexact science and different researchers will approach the issue differently. We feel that by using a mixed method we are looking at the important issues from all possible angles. Participants will also be asked to recall information and memory is not always reliable. The use of records, diaries and artefacts will help in reducing the errors that would arise from poor memory or vested interests in the outcome of the research.

## CONCLUSION

This chapter has demonstrated how MMR can be useful in research and supporting a research proposal application. There is no space to provide additional information that would be needed to support a research application such as the ethics application form, general information to participants, detailed questions that will be asked and the consent forms to given to participants. The detailed proposal has presented the key points that need to be covered in a proposal and even though it is a hypothetical case it has been presented as realistically as possible.

The use of MMR in this case is justified by the wide range of information that is required to form a comprehensive idea of the effectiveness of the program. Purely statistical data would tell a partial story of what is happening but not what various participants make sense of what has been happening. Interview data on the program would tell the story of what the participants think but would not show whether truancy has gone up or down. Combining the methods therefore give a more comprehensive account that would aid in decision making. This PhD would make a significant contribution in understanding truancy and supporting students from disadvantage backgrounds.

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# Chapter 13

## Mixing Methodologies: A Sliding Continuum or an Iterative Cycle?

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### **ABSTRACT**

*Should research in a particular field follow the traditional or favoured methodologies associated with that field, or, if it is desirable for the empirical methods of research to be mixed, can the same not be said for the theoretical standpoint of the research design? Does mixing methodologies imply that methodologies can be placed on a sliding scale to create a new methodology from combining elements of the old; or does it imply an iterative or cyclical process, using a suitable methodology for the stage in the research? This chapter explores what combining qualitative and quantitative methods actually means in terms of social and educational research and how this can assist in developing a mixed methodological approach suitable for addressing wicked problems faced in education in the rapidly evolving Anthropocene epoch. To address these issues, the chapter proposes a new term for combining methodologies: ‘omniduction,’ which encompasses induction, deduction and abduction and utilises each as the research, rather than the researcher, dictates.*

### **INTRODUCTION**

Mixed methods’ time came over decade ago according to Johnson and Onwuegbuzie (2004); however, thirteen years on, in this rapidly evolving Anthropocene epoch, although mixed methods are still popular in educational research, mixed methodologies seems to be a far less discussed approach. Should research in a particular field follow the traditional or favoured methodologies associated with that field? Or, if it is desirable for the empirical methods of research to be mixed, can the same not be said for the theoretical standpoint of the research design? Most educational research fundamentally seeks to improve outcomes, and how to improve outcomes in education is undoubtedly a wicked problem: there is no one solution; half the problem is in defining the problem; there is no room for trial and error, as any attempt to solve the problem will have an impact on the participants; and any success is, at best, subjective (Rittel &

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## **Mixing Methodologies**

Webber, 1973). Therefore, in the age of Anthropocene, where humanity is impacting on our environment at an unprecedented accelerated pace, does educational research need more than ever to bridge research traditions and disciplines in order to bring together research, policy and practice to have the desired impact on education?

This chapter explores what combining qualitative and quantitative methods actually means in terms of social and educational research and how this can assist in developing a mixed methodological approach which could bridge fields of study and address wicked problems. It considers whether mixing methodologies implies that methodologies can be placed on a sliding scale to create a new methodology from combining elements of the old; or whether it implies an iterative or cyclical process using a suitable methodology for the stage in the research. The chapter first presents a brief history of qualitative and quantitative approaches in educational research and reviews the literature pertaining to why a combination of qualitative and quantitative methods is believed to enhance research, particularly with regard to the triangulation of findings and providing a fuller picture of the situation. It draws on relevant literature to distinguish between methods and methodology and outlines the complexities in defining methodology in educational research, including the misuse of the term by researchers and authors. It considers the role of paradigms on researchers' methodological choices and their link to the qualitative and quantitative nature of inductive and deductive reasoning to generating and verifying theory. It argues that, for the very reason that combining methods gives a more holistic view of the situation being researched, so does mixing methodological approaches in terms of inductive and deductive reasoning. It presents a possible methodological continuum, placing abduction between the extremes of induction and deduction and, finally, it proposes a new term for combining methodologies: omniduction, which encompasses inductive, deductive and abductive reasoning in a cyclical methodological approach, which it concludes is a favourable approach in educational research in the age of Anthropocene.

## **History of Qualitative and Quantitative Approaches in Educational Research**

Formal educational research began in the late nineteenth century and focused predominantly on quantitative methods and experimental research (Jarvis, 2005). Educational research was very much psychological in the early days, focusing on the development of human emotional learning, which continued into the early twentieth century (Jarvis, 2005). One researcher who used these quantitative approaches, Thorndike, was thought to be very influential on educational research, however much of his research was not conducted anywhere near a classroom (Wellington, 2015). This has naturally been a criticism of early educational research (Wellington, 2015). How can a researcher really understand the field if they are not in direct contact with issues they are researching?

By the middle of the twentieth century, sociology became the main influence on research in education. Since then, ideas about the nature of educational research and how it should be conducted has evolved. From the 1970s onwards there has been a rise in research which favours qualitative approaches (Jarvis, 2005). According to Denzin and Lincoln (2005), qualitative research is “a situated activity that locates the observer in the world” (p. 3) which tackles the criticism of the more distant early educational research. However, the 1980s saw what was termed the paradigm wars in the United States where quantitative researchers became highly critical of the findings of qualitative researchers.

Experimental research is still prevalent in the United States in social and educational research, which is perhaps the influence of policy makers who look for answers which are generalisable as opposed to researchers themselves who seek to investigate wider issues in education. For results to be generalisable,



policy makers have come to expect evidence based “causal analysis by means of experiment as the only way to improve educational research” (Erickson & Gutierrez, 2002, p. 22). Indeed at the start of the 21<sup>st</sup> century, emphasis from the National Research Council in the United States on producing scientifically based research caused issues for qualitative researchers (Denzin & Lincoln, 2005), in terms of both securing funding to conduct qualitative research and the perceived significance of their findings, as critics believe that solely using qualitative methods without triangulation lacks rigour (Jarvis, 2005; Oancea, 2005).

There has been much debate over the merits of a qualitative approach over the more quantitative, scientific approach and whether educational research should “mirror or mimic so-called scientific methods” (Wellington, 2015, p. 11). Wellington gives three reasons why it is in fact a nonsensical debate whether educational research should use the scientific approach: firstly he states that there is in fact not just one ‘scientific method’ used in the sciences; secondly that not all research in science is driven by hypothesis, nor is it all experimental research employing control variables; and thirdly that quantitative and scientific do not have exactly the same meaning, that is rejecting a scientific method in research does not mean that quantitative approaches are not able to be used (Wellington, 2015).

Since the last quarter of the twentieth century the notion of mixing qualitative and quantitative methods has been widely debated, the supporters of which believe that combining methods takes advantage of “social science’s full methodological repertoire” (Greene, 2005, p. 274). Although a mixed methods approach is now commonly used in educational research, the debate over the appropriateness of combining research methods continues (Gunasekare, 2015). However, according to Palsson et al. (2013), in the current age of Anthropocene merely favouring a qualitative or quantitative approach cannot fully describe the human impact on our environment:

*To characterize the Anthropocene by means of quantitative data is one thing; to describe and understand how it perceives human interaction, culture, institutions, and societies – indeed, the meaning of being human – is truly another and a major challenge for the scholarly, literary, artistic, practitioner, and policy communities. (p. 10)*

According to Rittel and Webber (1973) “the search for scientific bases confronting problems of social policy is bound to fail, because of the nature of these problems” (p. 155). Therefore, wicked problems, which by definition have no definitive solutions, require a more integrated, holistic research approach as empirical knowledge alone cannot answer such problems (Head, 2008).

## **Distinguishing Between Methods and Methodology**

Defining the term methodology is a necessity if we want to define what it means to mix methodologies. The Collins Dictionary (n.d.) gives the following definition of methodology:

1. The system of methods and principles used in a particular discipline
2. The branch of philosophy concerned with the science of method and procedure

The definition of methodology above seems straightforward enough, however in educational research and indeed in academic publications about research methods, the term is often used interchangeably with ‘methods’ (Opie, 2004). In many research papers and essays, methodology is simply the title of a chapter or section of the write up where the methods are described. According to Cohen et al. (2007):

## Mixing Methodologies

“[t]oo often methods are confused with methodology and methodology is confused with design” (p. 165). Clough and Nutbrown (2007) argue that a critical design attitude should be “at work throughout a study, rather than confined within a brief chapter called ‘Methodology’” (p. 35).

Hartas (2010) defines methods as “a strategy for data collection and analysis” and methodology as “the study of research methods” (p. 445); however, ‘the study of research methods’, if not ambiguous, is certainly a broad term encompassing a range of interpretations. Table 1 shows a selection of the range of definitions and distinctions between methods and methodology. Although the exact definitions of methodology between researchers differ, they all share the common theme of justification of the empirical (Clough & Nutbrown, 2007).

Table 1. A comparison of researcher definitions of methods and methodology.

Researcher/Author	Methods	Methodology
Hartas (2010)	A strategy for data collection and analysis	The study of research methods
Cohen et al. (2007)	Range of approaches used to gather data; the techniques and procedures used in the process of data-gathering	Describes approaches to, kinds and paradigms of research
Clough & Nutbrown (2007)	The ingredients of research	Reasons for using a particular research recipe.
Opie (2004)	Procedures	Theory of getting knowledge
Greene (2005)	Either integrated or component designs	Theoretical stance and research design
Denzin & Lincoln (2005)		The best means for acquiring knowledge

The term *methods* is more agreed upon as the tools used for data collection, for example questionnaires, interviews or classroom observation. However, methodology is more than just describing the methods used to conduct research, as it incorporates *theory* which “focuses on the specific ways, the strategies or methods we use to understand social reality” (Hartas, 2010, p. 17). However just as the term methodology has different interpretations, the term *theory* means different things to different people. Robson (2002) cites two conflicting positions with regard to the place of theory in social research: those who believe that theory is stifling in planning and carrying out research; and those who believe that without theory the outcome of any research has little value, even if the research process is quicker. Creswell (2003) describes three levels of inquiry: firstly, the nature or theory of knowledge, known as epistemology and lastly the specific methods used to carry out the inquiry. Nestled between these, Creswell describes the middle level being the approach to empirical research, which could be interpreted as how methodology links epistemology and methods. Perhaps the term ‘methodology’ needs to be broad in definition if the aim of methodology is to help us “to understand, in the broadest possible terms, not the products of scientific inquiry but the process itself” (Cohen et al., 2007, p. 47).

The terms qualitative and quantitative are used extensively in research to describe researcher positioning, paradigms, methodologies, methods and data (Holland & Campbell, 2005). Howe (1992) makes two distinctions in the way that the terms qualitative and quantitative are used. The first is the literal use in terms of the type of data collected; the second is the derivative use concerning research paradigms. Deduction and induction have been considered a key difference between qualitative and quantitative methodologies (Cohen et al., 2007). Deduction is thus called as it deduces theory from empirical re-

search, where quantitative approaches are often preferred. Induction, on the other hand is more commonly employed in qualitative research, where observations come before the theory, so hypotheses may be induced or generated from this approach (Lobe et al., 2007).

Research generally starts with an observation or a theory: either a question to be answered or a hypothesis to be tested. From here the researcher needs to make decisions about the research methodology. If it is a hypothesis to be tested then it needs to be researched through deductive reasoning for theory verification. If the question is more open-ended then inductive reasoning can be used for theory generation, in order to identify themes in the data to generate new theories. Next the researcher needs to make decisions about how to collect the information required. Will it be theoretical or empirical research? If empirical, will the data come from primary or secondary sources? If primary, will the methodology selected be primarily quantitative or qualitative? These could all be considered methodological issues, however confusion occurs due to how the term methodology “is also used to denote the overall approach” (Sikes in Opie, 2004, p. 16), for example case study, action research etc. In an attempt to avoid this confusion, Denzin and Lincoln (2005) refer to this meaning of the term methodology as *research strategies*. The following is a list, which is by no means exhaustive, of these methodologies or *research strategies* available to the educational researcher:

- Action research
- Case study
- Ethnography
- Experimental research
- Grounded theory
- Narrative inquiry
- Secondary data analysis
- Survey research

To add a further level of ambiguity in the definition of the term methodology, each of these research strategies may be longitudinal, cross-sectional, historical, correlational or ex post facto or indeed a combination of two or more of these. Again, these could all be considered methodological issues.

This chapter has described two interpretations of the term methodology:

1. The theory linking epistemology to methods in terms of deductive and inductive reasoning;
2. The overall approach to a study (e.g. action research, case study, ethnography).

These do not include the definitions which the author believes are misinterpretations of the term methodology: for example, the interchangeability with the term methods and the title of a research design chapter or section. While the author does not dispute the bulleted definitions of methodology above, for the sake of this chapter, methodology will refer to the theory of generating and verifying knowledge through inductive and deductive reasoning, rather than the overall approach to a study. Methods will refer to the data collection techniques employed by the researcher, for example interviews or questionnaires; research strategies will refer to the overall approach to the research, for example action research or ethnography; and research design will refer to the chapter or section of research used to describe the methods, research strategies and methodology.

## **What's Mixed in *Mixed Methods*?**

Combining methods in research is designed to optimise the strengths and limit the weaknesses of the research (Lindsey, 2013). Rossman and Wilson (1985) state three main ways this is achieved: corroboration, elaboration and initiation. Corroboration is the triangulation of data, where different methods agree with one another giving more confidence in the findings. Elaboration is where one method can probe deeper into a phenomenon revealed by another method. Initiation is where consideration of alternative methods can offer a “fresh perspective” (Hartas, 2010, p. 278) on the research. Robson (2002) describes a benefit of mixing methods as a “reduction of inappropriate certainty” (p. 370) through triangulation, enhancing interpretability and supporting the development of explanations.

But what does mixed methods mean? Is it one method combining both qualitative and quantitative data collection; or within one piece of research, using one method associated traditionally as a qualitative method for investigating emerging themes, for example interviews, and another more quantitative data collection method for statistical analysis, for example questionnaires? It can in fact be both of these and indeed a combination of the two. For example, an interview which is traditionally perceived as a qualitative research method can be semi-structured, which can allow both deductive and inductive reasoning: the structured element seeks theory verification, however the willingness to allow the interview to be shaped by the views of the interviewee allows for the generation of new theory. Similarly, a questionnaire, traditionally associated with quantitative inquiry, can be composed of both closed and open questions, the closed questions providing theory verification through deduction and the open questions allowing theory generation. On the other hand, mixing methods for some researchers could simply mean using both interviews and questionnaires in the same study.

In their research into the level of enjoyment of learners in secondary education in England, and indeed the factors inhibiting enjoyment for learners, Gorard and See (2011) used a mixed methods approach within a case study research strategy. This enabled the statistical analysis of data from a large data set of survey results and other data provided by the institutions, for example attendance and progress data. However, transcripts from the more in-depth interviews with a subset of those surveyed, enabled the researchers to probe deeper into the issues with not just the learners but also with all the relevant stakeholders. This enabled not only a combination of breadth and depth in their research, but also a degree of triangulation in their findings:

*Interview and survey data provide both a complement to each and a counterpoint, allowing comparison between the perceptions of learners, staff and parents/carers and the larger picture. Through case reports the analysis of the data is rich and deep, in terms of understanding how the detail of context interrelates with reform. The statistical analysis of survey data discerns patterns of experience and outcomes across centres, providing a wider picture. (Gorard et al., 2009, p. 3)*

A further exemplification of the benefits in combining methods in educational research can be seen in the research into understanding users' avatar activities in virtual worlds by Feldon and Kafai (2008), where the paper explicitly analyses the findings in terms of resolving challenges through a mixed methods approach. In a similar manner to Gorard and See (2011), Feldon and Kafai (2008) used a quantitative survey to obtain large quantities of data for statistical analysis and used a subset of participants for more in-depth interviews to “provide a contextualized understanding of broader trends” (p. 580). Feldon and Kafai (2008) found that previous research on avatars had produced conflicting findings, which had not

been resolved due to the research only utilising a single method as opposed to gaining multiple perspectives. Therefore, in addition to the surveys and interviews, they also analysed quantitative data obtained from log files and qualitative data obtained through ethnography. As a result, Feldon and Kafai (2008) found that "...because structural constraints, cultural norms, and personal inclinations converge to affect the frequency of avatar-related activity, it is necessary to bring together data from the log files (quantitative hit counts), survey data (quantitative and qualitative), interviews (qualitative), and ethnographic observations (qualitative)..." (p. 584).

Apart from providing a richer and deeper understanding of the phenomenon whilst still looking at broader trends in users' avatar activity, the user perspectives also enabled the log file data to be classified and reduced appropriately for analysis (Feldon & Kafai, 2008). However, while this research exemplifies how qualitative methods can enrich the data produced by quantitative methods, it also seems to ignore its own warning of how the "[d]ependence on individual ethnographers entails potential observer effects and unitary perspectives on the nature of cultural activities within the virtual world" (Feldon & Kafai, 2008, p. 580) by only having one member of the research team conducting the ethnographic observations.

In a mixed methods inquiry, the researcher needs to make the decision whether the chosen methods should be integrated throughout the study, or if they should be presented separately and the outcomes of the different methods compared afterwards, which Greene (2005) refers to as "integrated" and "component" designs respectively (p. 276). Lindsay (2013) refers to the way methods are mixed as full or partial mixed methods, and perhaps for this reason he favours the term combined methods. Denzin (1989) refers to both of these mixed method designs as methodological triangulation, one of his categorisations of triangulation in social research. The first example is triangulation within methods, concerned with the ability to replicate the study; the second example is between methods triangulation, seeking convergence between different methods (Cohen et al., 2007). Feldon and Kafai (2008) may have achieved 'between methods' triangulation by using fully integrated mixed methods, however with only a single ethnographer, there is no 'within method' triangulation.

Lincoln and Guba (see Cohen et al., 2007), raise concern over the notion of theoretical and methodological triangulation as they believe this notion is incoherent in terms of epistemology, as "[n]o two theories, it is argued, will ever yield a sufficiently complete explanation of the phenomenon being researched" (Cohen et al., 2007, p. 144). This raises the question: "when social inquirers mix methods, are they also mixing philosophical assumptions, and should they?" (Greene, 2005, p. 275).

## **The Role of Positivist and Interpretive Paradigms**

Denzin and Lincoln (2005) define the term paradigm as the "basic set of beliefs that guides action" (p. 19) and describe two main paradigms which have influenced educational research: positivist and interpretive. The positivist paradigm is scientific and objective as opposed to the interpretive paradigm which is naturalistic and subjective (Denzin & Lincoln, 2005). Quantitative methods stem from the positivist paradigm, the scientific and objective nature of which, imply deductive methodologies setting out to verify a theory, in pursuit of the universal truth. Qualitative methods, on the other hand, are linked to the interpretive paradigm, where the subjective nature lends itself to inductive methodologies (Greene, 2005) and generating theory through research. Opie (2004) however, argues that all research is essentially interpretive as it can never be "an actual replica of the world" (p. 18).

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Opie (2004) places positivist and anti-positivist (interpretive) approaches on a continuum (see Figure 1), implying there is scope for less extreme approaches in the middle of this scale. This raises another question: does a study need to be wholly experimental or naturalistic?

Figure 1. Comparison of positivistic and anti-positivistic approaches to educational research (Opie, 2004, p. 8).

Positivistic approach	Anti-positivistic approach
Quantitative research techniques	Qualitative research techniques
Objective	Subjective
Experimental	Naturalistic
Pure	Applied
Outsider research	Insider research
Statistical analysis	Non-statistical analysis
Impersonal	Individual
Certain assumptions taken for granted	Taken for granted assumptions investigated
Macro concepts: society, institutions, norms, roles, positions	Micro concepts: individuals, personal constructs, negotiated meanings
Generalise from specific	Interpret the specific

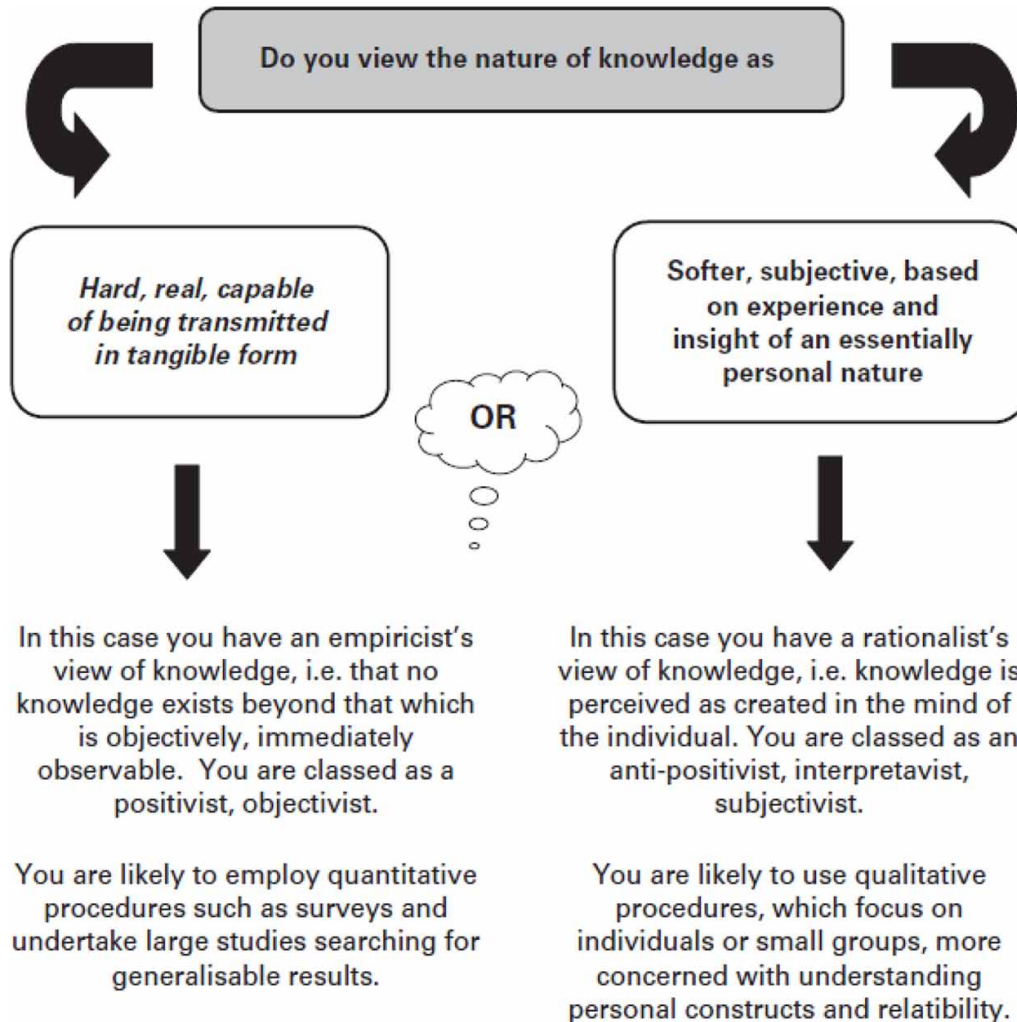
← Continuum →

However, in the same publication, Opie (2004) also produced a flow diagram with two distinct routes to take in educational research depending on the researcher's view of the nature of knowledge (see Figure 1). This seems to be in contrast to the idea of a paradigmatic continuum.

Purists believe that different paradigms encompass assumptions which are not compatible with one another (Smith & Heshusius, 1986). This was particularly the case in the 1980s when, in the aforementioned paradigm wars, when debate between the merits and limitations of qualitative and quantitative approaches was at a peak (Gunasekare, 2015). Pragmatists, on the other hand, believe that paradigmatic positions can be brought together. In the middle of this continuum are situationists who believe that paradigmatic integrity is important, however they also appreciate that taking a variety of perspectives on a situation has the potential to enhance the meaningfulness of the research findings (Hartas, 2010). Hartas (2010) states that “paradigmatic purity is not a prerequisite to the completion of a research project” (p. 278). If it is not necessary to remain rigid to one paradigm, and a mixed methods approach is deemed the optimal approach in educational research, then would combining qualitative and quantitative methodologies be a natural consequence?

As a result of the complexities of individuals or communities in the age of Anthropocene, a simplistic linear view of methodology may not deal with their diverse nature. Complexity theory, however, looks for “multiple causality and multidirectional causes and effects” (Cohen et al., 2007, p. 34). Complexity theory aims to look at phenomena through as many eyes as possible which allows for multiple perspectives and hence multiple causality to be investigated. According to Cohen et al. (2007) complexity theory in educational research challenges conventional methodological approaches and hence “provides an emerging new paradigm for research” (p. 34).

Figure 2. Flow diagram for defining views of knowledge (Opie, 2004, p. 13)



## Combining Qualitative and Quantitative Methodologies

“Beyond method, what else is mixed in mixed method inquiry?” (Greene, 2005, p. 275)

As discussed earlier, a mixed methods approach has been popular since the end of the twentieth century; that is combining both qualitative and quantitative methods to triangulate findings. In fact this mixed method triangulation may use a combination of both positivist and interpretive techniques (Cohen et al., 2007). However there seems to be an expectation for research students to choose which epistemology and methodology to frame their research and stick to only that. But could this be damaging to the research as any findings are shoe-horned into one chosen ‘ology’? Maxwell and Loomis (2003) define mixed method inquiry as far more than utilising a combination of data collection procedures and list five components of a mixed method inquiry: purposes of the inquiry; the conceptual framework; the research questions; specific methods; and validity. These five components should influence each

## **Mixing Methodologies**

other for a holistic mixed method inquiry. Greene (2005) adds to this definition stating that “flexibility, creativity, resourcefulness – rather than a priori methodological elegance – are the hallmarks of good mixed-method design” (p. 277). Furthermore, according to Hartas (2010), due to the complex nature of educational research, “...multiplicity and polyphony in the modes of inquiry are required to respond to the different needs of individuals and groups in society...” (p. 27).

According to Opie (2004) the “relationship between methodology and methods and knowledge and truth is controversial” (p. 21). The interaction of conceptual and methodological issues in mixed method research is complex and constantly evolving, but central to the concept, is that the methods selected should be based on what is appropriate to the research questions or hypotheses posed (Johnson & Onwuegbuzie, 2004). This stance is shared by Greene (2005) who states that methods should be “selected and implemented in the service of inquiry questions rather than vice versa” (p. 277).

The fundamental reason for conducting research is to acquire and communicate knowledge (Opie, 2004). However, there are disagreements among researchers for how to obtain that knowledge due to disagreements in methodology and epistemology (Griffiths, 1998). Many researchers label themselves as a qualitative researcher or a quantitative researcher. Denzin and Lincoln (2005) describe five ways in which qualitative and quantitative researchers differ:

- *Uses of Positivism and Post Positivism* Positivism for quantitative researchers and post positivism or interpretive for qualitative researchers.
- *Acceptance of Postmodern Sensibilities* i.e. how different methods tell different types of story.
- *Capturing the Individual’s Point of View* Both types of research want to achieve this, but approach it differently. Qualitative researchers do so through a detailed, in depth study; quantitative research use statistical analysis.
- *Examining the Constraints of Everyday Life* Qualitative researchers confront it, while quantitative researchers are more distant due to the large numbers involved.
- *Securing Rich Descriptions* Qualitative researchers believe this is valuable, while quantitative researchers want to make generalisations which the detail can hinder (pp. 11-12).

While Denzin and Lincoln (2005) seem to appreciate the value of mixed methods research, they are primarily qualitative researchers and this is perhaps noticeable in the differences described above as the quantitative standpoint is portrayed in a more negative light to the qualitative researcher’s view of research. Denzin and Lincoln (2005) describe qualitative researchers as *bricoleurs*, from the assumption that there is lots going on at one time in qualitative research in terms of different voices, perspectives and points of view. Denzin and Lincoln (2005) view qualitative research as not favouring a single methodological practice as it does not belong to one theoretical discipline. However quantitative researchers often regard qualitative research as “informal and lacking rigour” (Jarvis, 2005, p. 209). Miles and Huberman (1994) state that the quantitative-qualitative argument is unproductive and that it is not necessary to “tie the distinction to epistemological preferences” (p. 41). Salomon (1991) argues that it is in fact not an argument of quantitative or qualitative but a case of whether an analytic or systematic approach is required or preferred.

There are researchers at both extremes on the qualitative and quantitative continuum. On one extreme lies the quantitative researcher Kerlinger, who believed there was no qualitative data as everything can be interpreted as simply 1 or 0. At the other extreme is the qualitative researcher Berg, who believed that all data is qualitative (Miles & Huberman, 1994). Miles and Huberman (1994) state that “numbers



and words are both needed if we are to understand the world” (p. 40). As self-confessed qualitative researchers they believe that qualitative research requires methods which are “credible, dependable, and replicable in quantitative terms” (Huberman, 1994, p. 2). Howe (1988) believes qualitative and quantitative methods are naturally intertwined and cannot be presented in isolation and Jarvis (2005) believes there is a place for both types of method in educational research. A quantitative approach can support a qualitative study by supplying background information and producing a representative sample. Conversely, a qualitative approach can support a quantitative study through conceptual development (Miles and Huberman, 1994). Nevertheless, once a researcher has chosen to combine methodologies, are the qualitative and quantitative approaches given equal status in the research or is it acceptable for one approach be dominant in the research? (Greene, 2005).

As discussed earlier, in a good mixed method inquiry the methodologies and methods will be solely dictated by the research question or hypothesis. However according to Opie (2004) the most significant influence on the choice of methods and methodology employed in a study is the researcher’s ontological and epistemological stance. This stance is often driven by past experience and dictates the strategies and approaches used by the researcher (Robson, 2002). In reality, however, education researchers will also be constrained by practicalities, for example access to schools, funding etc.

## **Combining Inductive and Deductive Reasoning**

Mixing methods lends itself to mixing more than one methodology. Punch (2009) describes two common mixed-method designs: explanatory, which moves from quantitative to qualitative methods; and exploratory, which starts with qualitative methods and moves onto quantitative methods. These fit well with the deductive and inductive extremes to methodological approaches. Robson (2002) however argues that quantitative research can generate theory and qualitative research can verify theory. For example, as discussed above, semi structured interviews allow both deductive and inductive reasoning; questionnaires which mix quantitative and qualitative methods by combining closed and open questions also allow for both deductive and inductive reasoning.

There is a less discussed, third type of reasoning in educational research, that of abduction, which seeks not only to explore and to explain, but also to determine causality. Abductive reasoning is more commonly known and used in scientific research where a best-fit method of educated guesses seeks the most likely explanation for the tested hypothesis. Thagard (1980) represents this neatly as:

*Phenomenon P is puzzling.*

*Hypothesis H would explain P.*

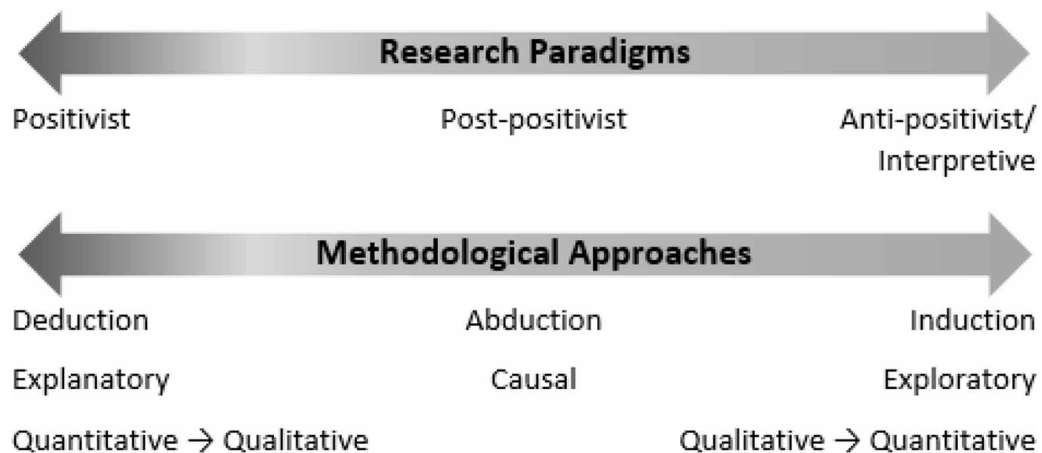
*∴ H is plausible, and should be subjected to test (Thagard, 1980, p. 188)*

The scientific definition of abduction agrees with the above description of abductive reasoning in educational research, as it is combining deductive reasoning from testing a hypothesis and inductive reasoning by seeking the causal explanation for the phenomena investigated. Therefore, is abductive reasoning a means of mixing methodologies? If so, then it implies perhaps that inductive and deductive reasoning are extremes on a methodological continuum where abduction is positioned as a more liberal centre on the scale (see Figure 3). However, in practice is it helpful to combine the methodologies in

### Mixing Methodologies

this manner or is it more favourable to simply move from one methodology to another depending on the demands of the current stage of the research?

Figure 3. A possible continuum of methodological approaches to educational research



While positivist and interpretive paradigms fit well on a continuum, perhaps due to their opinion base, placing the methodological approaches on a continuum seems less convincing. Therefore, perhaps an iterative or cyclical methodological approach is more sensible. Box and Woodall (2012) describe the inductive-deductive process as an iteration between theory and practice which is not unique to research, but is part of every human experience, illustrated by the following amusing scenario:

*Model: Today is like every day.*

*Deduction: My car will be in its parking space.*

*Data: It isn't.*

*Induction: Someone must have taken it.*

*Model: My car has been stolen.*

*Deduction: My car will not be in the parking lot.*

*Data: No, it is over there.*

*Induction: Someone took it and brought it back.*

*Model: A thief took it and brought it back.*

*Deduction: My car will have been broken into.*

*Data: It's unharmed and unlocked.*

*Induction: Someone who had a key took it.*

*Model: My wife used the car.*

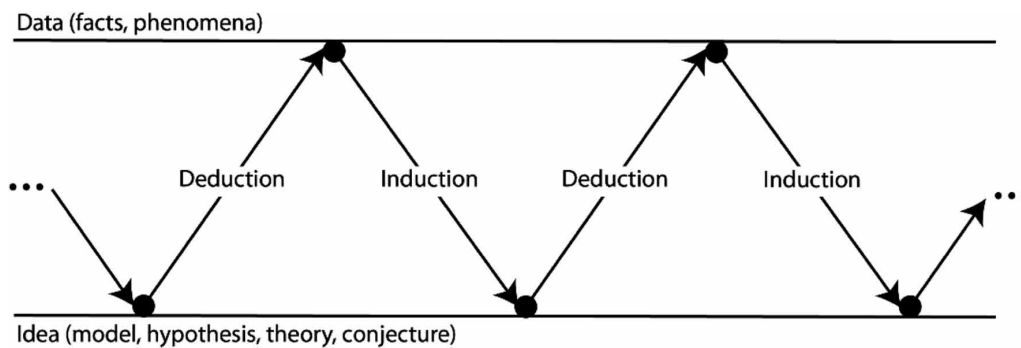
*Deduction: She probably left a note.*

*Data: Yes. Here it is*

*(Box & Woodall, 2012, p. 22).*

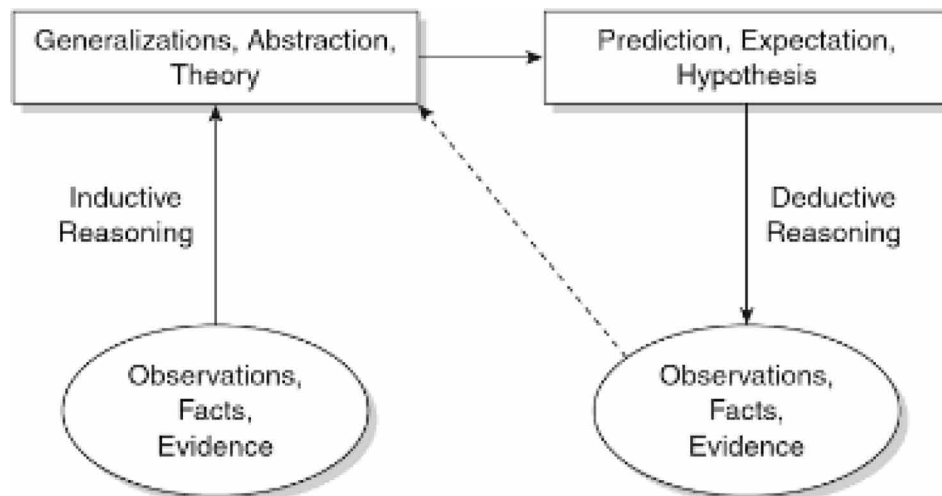
From this example, this iterative process seems to always follow same pattern, moving from explanatory deductive reasoning to exploratory inductive reasoning, with no explicit consideration to causal abductive reasoning. Box, Hunter and Hunter (2005) represent this mixed methodology diagrammatically (see Figure 4), perhaps mimicking a game of tennis between the observation and the hypothesis, iterating between deductive and inductive reasoning on each hit of the rally.

Figure 4. Combining induction and deduction in an iterative process (Box et al., 2005, p. 2)



Combining induction and deduction has also been modelled as a cycle, for example Teddlie’s and Tashakkori’s (2009) cycle of scientific methodology (see Figure 6). In this model, hypothesis and theory do not come under the same umbrella, which adds a little more complexity to combining methodologies as an iterative process, however, as discussed earlier, the term theory is a very broad term and is interpreted differently by researchers. Similarly to Box et al. (2005), no explicit consideration is given to the stage in the methodology which seeks to determine the cause of the phenomena under investigation. Furthermore, although Teddlie and Tashakkori (2009) explicitly state that there are different places where

Figure 5. An example of an inductive-deductive cycle, the cycle of scientific methodology (Teddlie & Tashakkori, 2009, p. 27)



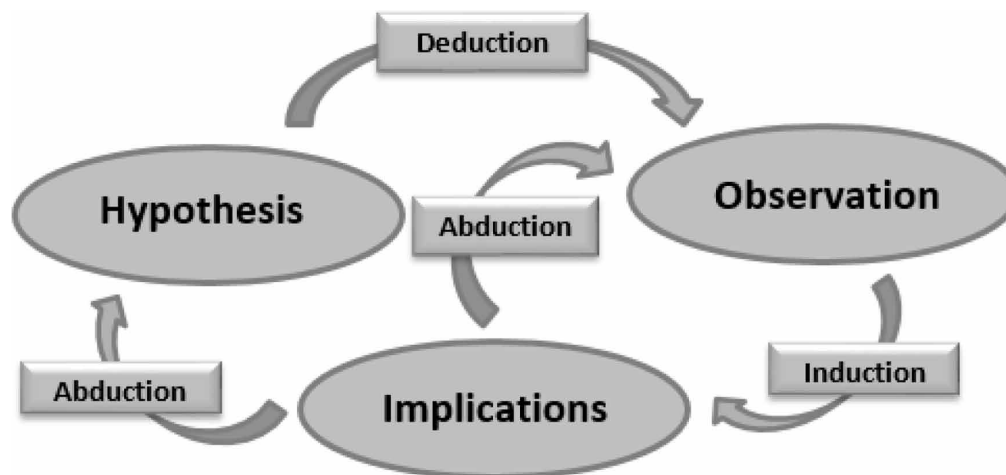
## Mixing Methodologies

you can begin this inductive-deductive cycle depending on the stage of the research, Figure 5 implies that once you join the cycle you will eventually simply follow the hypothesis-observation-theory pattern.

## Theory Verification and Generation Through Omniduction

This chapter proposes another way to describe combining inductive and deductive methodologies: *omniduction*. As the prefix implies, omniduction encompasses all the methodological approaches and employs each when appropriate to the stage of the research. In this sense it is a cyclic methodological process (see Figure 6).

Figure 6. Mixing Methodologies through Omniduction

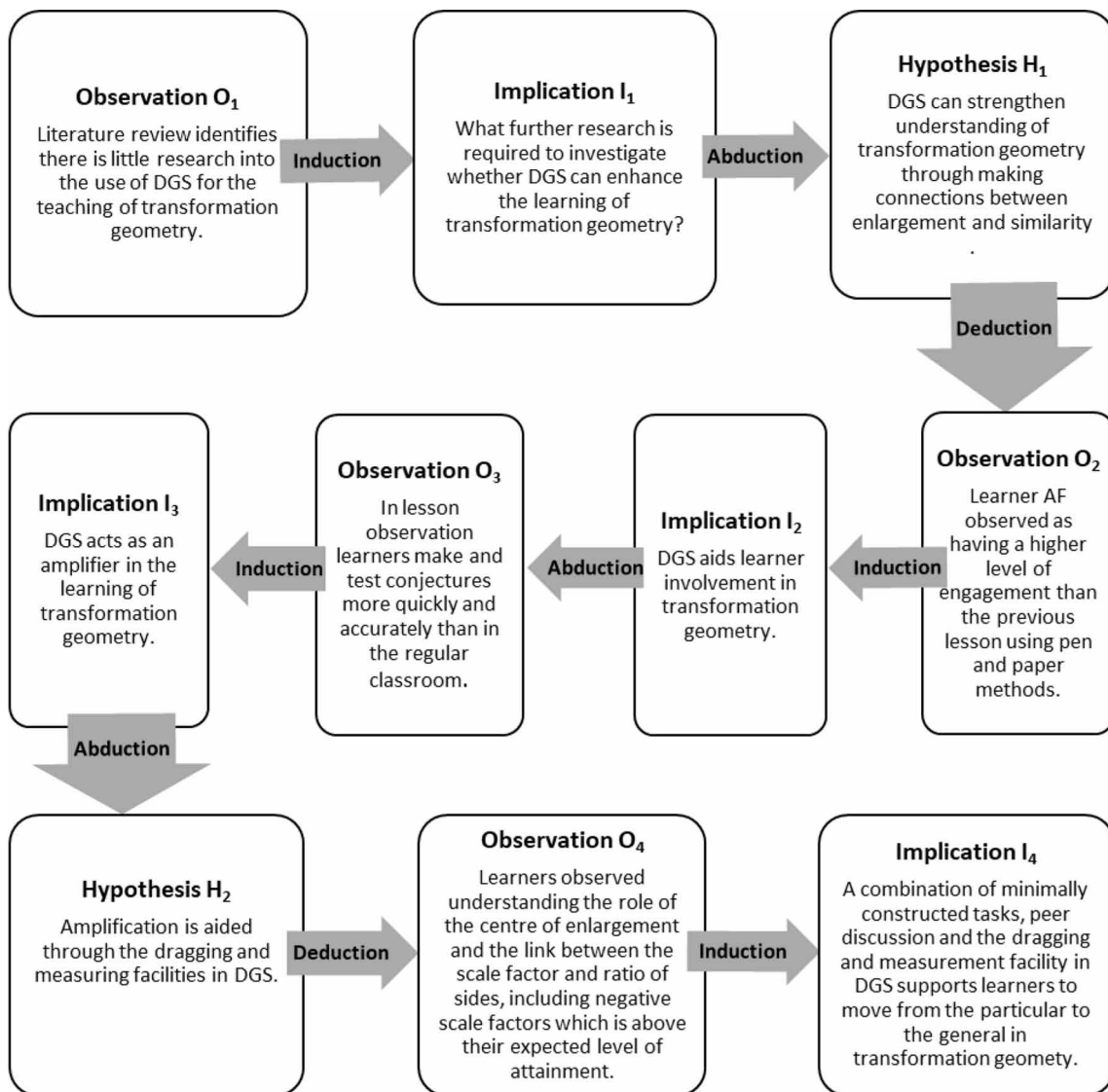


Whether you start with an observation or a hypothesis, research will involve theory which is either generated or requires verification. Either way, implications should be drawn from the findings which may lead to further observations required or to new hypotheses or research questions being formed. This is because although theory informs practice, theory can also emerge from practice. Therefore, simply choosing a deductive or inductive approach seems inappropriate as the approach is dependent of the stage of the research, just as the qualitative or quantitative nature of the methods should be dependent on the research questions and what the research requires rather than a favoured approach on behalf of the researcher.

The omniduction cycle illustrated in Figure 6 can be exemplified through a small-scale research project into the effective use of Dynamic Geometry Software (DGS) in the mathematics classroom (Denton, 2017) in the teaching and learning of transformation geometry. The project started with a review to analyse the existing literature at the time on using DGS and how it acts as a microworld, where an array of situations in a mathematically consistent environment can be created. As can be seen in Figure 7, although the literature review found a wealth of research on using DGS in mathematics for other areas of geometry and mensuration, it identified a lack of research into the use of DGS for transformation geometry, particularly enlargement and similarity. This can be seen as an observation, denoted as  $O_1$  in

Figure 7, as no prediction had been made prior to the literature review, the qualitative data gathered from the review shaped the next stage in the research. Due to omniduction combining inductive, deductive and abductive reasoning, and inductive reasoning by its very definition is open to new changes and direction, planning for using omniduction could not be carried out past this initial observation, as the order and the detail of the omniductive stage in any research is subject to change depending on the findings from the previous stage. Figure 7 has therefore been produced in retrospect of the research to explain how omniduction could be used to describe the methodology at each stage of the research.

Figure 7. An exemplification of omniductive reasoning from a small-scale research project into the use of Dynamic Geometry Software in the mathematics classroom



## **Mixing Methodologies**

Where you start in the omniduction cycle is very much down to the starting point of the research. In the DGS project there were no, or at most very little, pre-conceived ideas by the author of how DGS could support the learning of transformation geometry. Had the author used DGS for teaching this topic previously, the research could have started with a hypothesis which the author would seek to verify through deduction.

Following the initial observation,  $O_1$ , an implication arose, denoted as  $I_1$  in Figure 6. This could be considered a process of inductive reasoning as the initial observation resulted in theory generation. Following  $I_1$ , the first hypothesis,  $H_1$ , was implicitly formed, that DGS can strengthen learners' understanding of transformation geometry through making connections between enlargement and similarity. The process in the omniductive cycle at this stage could be considered abduction as the hypothesis, or in this case research question, was designed to consider how understanding could be enhanced through the use of DGS, hence seeking the cause.

Through qualitative observations of learners working with transformations, firstly using pen and paper methods then using DGS,  $O_2$  was deduced, as the theory hypothesised,  $H_1$ , was verified through the observation,  $O_2$ , leading to the implication,  $I_2$ , that working with DGS can improve learner motivation and participation. At this stage in the omniductive cycle it can be seen that research may not neatly continue with simply hypothesis-observation-implication etc.  $I_2$  led the researcher to consider the cause of the improved learner involvement in the topic, so through abduction  $O_3$  suggests that the lesson moves on at a quicker pace than a regular pencil and paper lesson to produce transformations, which could result in improved learner motivation, generated the theory,  $I_3$ , that DGS acts as an amplifier for the learning of transformation geometry. To seek the cause of this amplification, it was decided to investigate whether the dragging and measurement facilities in DGS enabled learners to grasp the tricky concepts of the role of the centre of enlargement and the relationship between the scale factor and the ratio of sides in learning enlargement and similarity more quickly and easily than with pencil and paper methods alone, an implicit hypothesis denoted as  $H_2$  in Figure 7. This theory was verified through qualitative observations,  $O_4$ , through deductive reasoning. Finally, the overall conclusion,  $I_4$ , was generated that a combination of minimally constructed tasks, peer discussion and using the dragging and measurement facilities allow for abstractions in transformation geometry through allowing the learner to move from the particular to the general (Denton, 2017).

The cyclical nature of action research fits particularly well with an omniductive methodology, however omniduction can be applied to other research strategies, as it follows Gorard's and Taylor's (2004) position that the methodology used in research needs to be appropriate to the research questions being explored as opposed to dictated by favoured paradigms, epistemology, research strategies or methods.

## **Addressing Wicked Problems With Omniduction**

“Theory is seen to grow out of practice and to feed back to inform and guide practice” (Cobb & Yackel, 1996, pp. 175-176).

As discussed earlier in the chapter, educational research should not simply be carried out away from the classroom as, through observing teaching practice, the theory of what constitutes good pedagogy can emerge, and the implications can then be used to shape future teaching practice. To this extent the relationship “between theory and practice is reflexive” (Cobb & Yackel, 1996, p. 175). Due to this reflexivity between pedagogy and practice, research methodology needs to employ both inductive and

deductive reasoning, for theory generation and theory verification respectively, and abductive reasoning to determine the cause of the phenomena under investigation.

To address wicked problems with no objective solution, it cannot be possible to approach them simply scientifically. A mix of methods and methodologies is needed to span disciplines and to relate to both the policy makers and the teachers on the front line of education, in order to impact outcomes. Omniduction lends itself to addressing such large-scale dilemmas, by combining methods using a fully integrated methodology for a holistic mixed methods inquiry, which can bridge different epistemological standpoints, as omniduction seeks to generate and verify theory and uncover the causes of the phenomena in question.

One such wicked problem is whether the education system in the UK, and indeed many other countries, is fit for purpose. Teachers in the UK are put under unnecessary pressure with constant changes to the assessment system, which does not only change every 4-5 years with successive governments, but in recent years there have been changes at every Cabinet reshuffle, with every new education minister keen to leave their legacy; the usefulness of these changes are of course subjective. One reason why this is a wicked problem is that the issues are very complex and cannot be ‘solved’ to everyone’s satisfaction, not least because the two major political parties in the UK have contrasting ideas of how traditional education should be. The stakeholders are numerous from the teachers and learners, to policy makers, universities and employers, the latter of which complains that our young people do not leave school with the necessary numeracy and literacy skills for the workplace, despite examination results improving year upon year.

Even if we believed that this problem was solvable, an even more wicked problem exists: how we can possibly know if our education system will be fit for purpose in 20 years’ time? Many of the jobs our young children will have in the future are yet to be invented, so how can we know that the skills we are teaching them are fit for future practice? What is required therefore, is the development of a sustainable curriculum which suits the needs of all the stakeholders, however this is “dependent on the interplay of a range of factors and requires a multi perspective approach” (Jawah, n.d.).

Figure 8 demonstrates a possible model to this multi perspective approach in higher education by Juwah (n.d.), which has striking similarities to the interplay in the omniductive research cycle and ensures all stakeholders’ needs are addressed, even if they cannot be met.

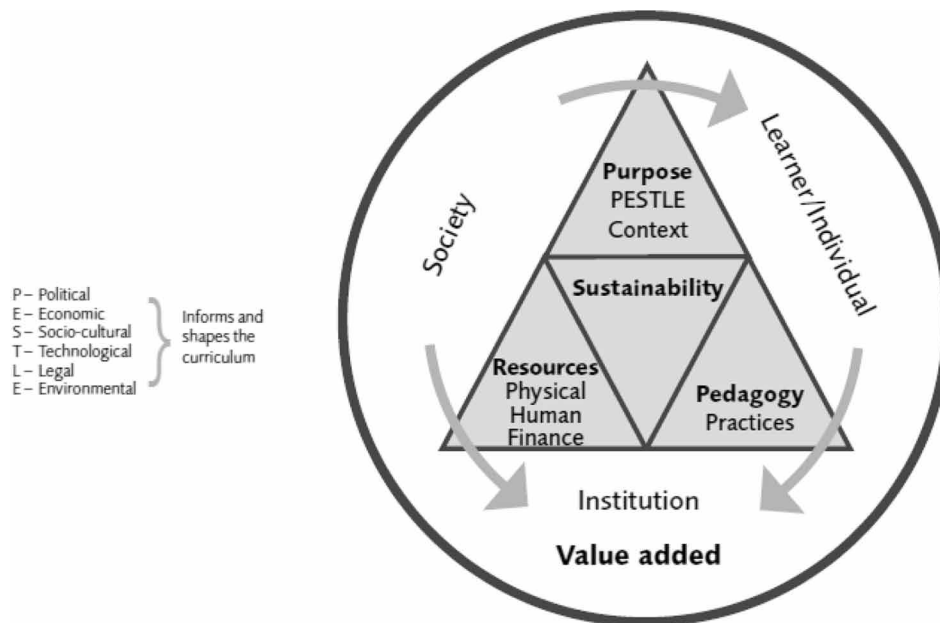
According to Juwah (n.d.), these pedagogical, social and technological interactions between stakeholders are vital to achieve a multi perspective approach.

Omniduction can address the wicked problem of whether our education system is fit for purpose now and in the future, as it allows this multi perspective approach through combining both quantitative and qualitative methods and applying deductive, inductive and abductive reasoning as dictated by the research in order to gain the viewpoint of all stakeholders to address the following questions:

- What are the skills needed in the workplace and where are the current shortages?
- How can we plan to prepare our young people for jobs which do not yet exist?
- Which current jobs could be performed by artificial intelligence (AI) in the future?
- What skills can people bring to the workforce which AI cannot?
- Is technology an occasional add-on in the classroom, rather than embedded throughout?
- Why are some teachers still resistant to using technology despite numerous training opportunities?
- Can our learners apply the skills they learn in an education setting to the world of work?

## Mixing Methodologies

Figure 8. Curriculum Development (Juwah, n.d.)



This list is not exhaustive; it is merely intended to highlight the breadth of questions that need to be addressed to resolve the misalignment between the education system and contemporary needs (Mili, 2015). The questions above require data analysis and perspectives from a range of disciplines and stakeholders, just as wicked problems faced by the world more generally require a multidisciplinary approach. The problem arises that schools tend to be made up of isolated disciplines, and intradisciplinary changes to teaching approaches cannot bring about the desired change. In a world where transdisciplinary skills are required for autonomy and innovation to adapt to the evolving challenges of the Anthropocene, the epistemological and methodological freedom permitted through omniductive reasoning could encourage a multidiscipline approach to curriculum development in order to effectively tackle this wicked problem.

## CONCLUSION

A mixed method inquiry seeks to combine the best of what qualitative and quantitative approaches have to offer, and can add rigour to research. Quantitative methods can enhance qualitative findings, and vice versa, and combining methods can give a more holistic view of the situation and maximise validity through the triangulation of research findings. However, it is the research question and the stage of the research which should dictate these methods, rather than a favoured approach by the researcher based on epistemological and methodological traditions. Similarly, whether a researcher considers themselves to follow a positivist or interpretive paradigm should not be the deciding influence on whether quantitative, deductive methodologies are employed as opposed to qualitative, inductive methodologies.

Research methodology is inherently iterative or cyclic, as whether theory is generated or verified, implications will subsequently arise in the form of new questions or theory. In the fast moving pace of the Anthropocene epoch, and to address the wicked problems associated with it, there is the need for



differing educational disciplines and fields of research to work together, and for that research to inform both policy and practice to ensure education is fit for purpose both now and in the future. Omniduction is a mixed methodological approach which aims to capitalise on this process as it encompasses inductive, deductive and abductive methodologies in a cyclical approach with no fixed starting point and no set order to employing the methodological reasoning at each stage of the research. Omniduction allows a voice to be given to all stakeholders from the most to the least powerful to gain a multi-perspective on the research phenomena being investigated. With omniduction, the methodology is dictated by the research, not the researcher.

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# Chapter 14

## Thinking Outside the Boxes: Communication, Mixed Method, and Convergence

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### **ABSTRACT**

*The aim of this study is to conduct a critical discussion within a political economy framework on the use of mixed method, which is an increasing tendency in communication research, and its philosophical foundations in post-positivism. In the study, the mixed method called as “third methodological movement of the 21st century,” the limitations of the attempts to combine qualitative and quantitative methods in the positivist and postpositivist paradigm are revealed. The study discusses how the convergence of quantitative and qualitative methods in critical economy politics can be possible and what opportunities it offers in an effort to make a holistic explanation of social reality.*

### **INTRODUCTION**

This study focuses on the mixed method as an increasingly used method in communication studies. In this study, the mixed method is examined within the framework of the methodological difficulties and tensions of critical communication studies and it is investigated whether it provides the opportunity to make a holistic explanation by combining the knowledge of the macro and the knowledge of the micro. For this purpose, firstly what is mixed method, paradigmatic problems will be explained and the dominant pragmatist approach will be criticized. Hereby, it is suggested that the mixed method should be handled in a critical realistic approach within a critical economic political framework and used with a dialectical understanding. Thus, an attempt is made to overcome the paradigm problems of the mixed method and to provide a methodological approach to critical communication studies.

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## **BACKGROUND**

As in all social science disciplines, the mixed method, which is defined as the third methodological method emerged in the 21<sup>st</sup> century and claimed to be “a revolution in the scientific research area” or “a research paradigm whose time has come,” is increasingly being discussed in the field of communication and the number of mixed method studies is increasing rapidly (Creswell et al., 2015; Tashakkori and Teddlie, 1998; Johnson and Onwuegbuzie, 2004). Creswell (2013: p. 207) claims that this research design will dominate the field in the future.

Mixed method research is growing rapidly in the field of communication and there are important reasons of this growth. Communication is a field that is growing in importance in the way of clarifying social phenomena and relations, and seeing the possibilities of change in it. Because at the present stage of capitalist development, technological developments are transforming the field of communication very fast and radically, and social relations are being mediated by all means of communication including traditional mass media and new media.

In today’s world, where social life is becoming more and more complicated and explaining the historical and social relations behind what appears in these social relations is getting more difficult, the importance of scientific activity to understand and explain social phenomena is also increasing. In fact, as one of the important elements of social relations, communication processes cannot be ignored in any research that claims to make a holistic explanation of social reality. The importance of scientific knowledge about communication processes lies here. The effort to understand society calls us to have scientific knowledge in this field. However, despite the rapid increase in the amount of academic knowledge published and become socialized in the field of communication, it is still debatable whether it is a remedy for the problem or not.

Science is the activity of explaining the facts. And the scientific method covering the ways of explaining the universe / facts is a fact-oriented and de facto process on the one hand and a descriptive and mental one on the other (Özlem, 2012, p. 28). However, different approaches towards science derive from two different tendencies that have tensely co-existed throughout the history of science, positioned against each other, and influenced and transformed each other. These two are the nomothetic perspective, which is derived mainly from great propositions and accepts the knowledge being generalized with the possibilities out of the limitations of everyday life, universal laws and deductive explanations, and the ideographic perspective which directs its attention to its own specific aspects, claiming that nomothetic perspective, which has been developed against it, is insensitive to local and event-based meanings (Denzin and Lincoln, 1994, pp. 99-104). In short, it is the tension between materialism and idealism.

These different philosophical attitudes are also the source of tensions in the social sciences, namely structure-agent, subject-object, macro-micro dualities, and methodological contradictions. Therefore, researcher’s attitude towards scientific knowledge and methodology is shaped by his/her own philosophical assumptions. Depending on the philosophical assumptions of the researcher, the differentiation of the research object and the level of knowledge to be achieved, different designs and different methods are proposed for the production of scientific knowledge. As the interests of research diversify, methods diversify as well (Bottomore, 1977, p. 24).

Certainly, there isn’t any social phenomenon which is unidimensional. Especially, the fact that the research objects of the interdisciplinary fields such as the field of communication are part of complex social processes, makes research practice even more difficult; and research focusing on only one dimension of communication activity remains weak and incapable both in providing a holistic view of the

## ***Thinking Outside the Boxes***

social reality which it tries to explain and giving an integrated account of reality. On the other hand, generic knowledge's insufficiency in explaining the micro processes of the information is an important issue in social science discussions. And in the face of this complexity and multidimensional nature of the research object of the field, what leaves its mark on the discussion of the methodology of communication studies is the eternal dichotomy between the advocates of the defining dimension of quantitative data and the advocates of the strengths of the qualitative data which strengthens the scientific explanation.

This heated debate that have been continuing between the purists of quantitative and qualitative research camps for a century, has been located on the "objectivity" of scientific research by the positivist science supporters and their opponents (Johnson and Onwuegbuzie, 2004). Critical realist, interpretivist and postmodernist scientists who strongly oppose the positivists' emphasis on the objectivity of the researcher and the research, on the other hand, emphasize the value laden quality of the science and call subjectivity to the practice of producing scientific knowledge.

The purists of the two camps tend to reject each other's methods. In the field of communication, this tendency sometimes reaches such extremes that the opponents of positivism go back to the point of rejecting empirical research, and some positivists even accuse the studies carried out by so-called "non-objective" methods as non-scientific. So, theoretical studies and empirical studies are seen as the studies of the field of communication remain in intransigent contradictions and contradictions (Splichal, 1989a). This perception may lead some researchers to tear the scientific research from its own factivity for the sake of criticizing and not falling in empiricism.

In the 90s, among these debates and also as a critique of the purists of these two camps, an attempt to combine research data focusing on the different dimensions of the research object has occurred in order to increase the findings' ability of being interpreted. In this way, it is claimed that researches will not be limited with the data provided by one single method, the data of different levels of the research object will be collected and more comprehensive results will be achieved. Accordingly, more comprehensive results will be achieved by bringing together qualitative data that gives meaning to numerical data and quantitative data that clarifies qualitative data.

In the field of social sciences, the effort to achieve these comprehensive results and get beyond the limits of these two research designs by using qualitative and quantitative methods is increasingly gaining strength (Greene, 2005, p. 209). On the other hand, according to Onwuegbuzie and Leech (2004, p. 15), mixed method design is an attempt to bridge the opposing designs. With this effort, the use of mixed methods appears as an increasingly strong trend in the field of communication. The research in which I examined the communication researches that have been carried out in Turkey in the last five years methodologically has shown that in addition to multi-method researches using more than one method, mixed method research using both quantitative and qualitative methods has also been increasing. While most of them combine qualitative content analysis and survey data, a significant number of them combine quantitative content analysis data with ethnographic data. Especially in the current study fields such as new media, it is found that the rate of mixed design research has reached to 10 percent. The research reveals that in the field of communication, mixed method is mostly preferred in the studies of representation (21.5 percent). And this is followed by ideology (12.8 percent), technology (12.8 percent) and advertising-marketing (12.8 percent) studies. One out of every ten (10.3 percent) of the mixed method researches is on news / journalism. In most of the studies intended to apply the mixed method approach by combining quantitative and qualitative methods in the communication studies, the data chiefly collected from content analysis were interpreted together with the data collected from other methods to increase the explanatory power of the findings (Etiye, 2018, pp. 119-130).

## **Mixed Method! But How?**

The mixed method has been tried to be explained by various conceptualizations such as multimethod or integrative designs. A variety of mixed method definitions including different components of methods, research processes, philosophy and research patterns have been made (Creswell and Clark, 2015, p. 3). According to Leech and Onwuegbuzie (2009, p. 266), the mixed method, in short, is the use of quantitative and qualitative data collection and analysis methods in the same research and the interpretation of these data together.

Apart from the problems arising from the paradigmatic differences, mixed method has some practical problems experienced in practice as well. The questions such as sample selection, how and in which phase mixing process is carried out and conformity between the method and the studies using this method seem to be far from being answered clearly (see Greene, et. Al., 1989; Greene, 2005; Onwuegbuzie and Leech, 2006). In communication studies in Turkey, it can be said that the explanations about the method are quite limited in the studies carried out by use of mixed methods and the researchers generally do this gropingly (Etike, 2018).

Researchers generally tend to use two different designs together in a pragmatic way and try to ensure the “integrity” by combining every data eclectically. However, this effort is far from being an attempt to make a holistic explanation.

Teddle and Tashakkori (2003), describing the mixed method as a model or a design, draw attention to the fact that these models are still in the development stage, and state that the biggest problem in practice is to decide whether the data collected by use of different methods will be analyzed by a quantitative approach or a qualitative one. Because, according to them, choosing one method would mean giving up the other. Or, at best, it would force the researcher to mind a kind of hierarchy between the methods. And this will lead us back to paradigmatic and philosophical problems.

While quantitative and qualitative methods are seen as the methods of different designs, different epistemological and ontological approaches and different research traditions, the attempt to combine them in an eclectic way disrupts the integrity between philosophy, method and technique (Etike, 2018). This disintegration and method confusion in the field occurred in conjunction and parallel with the methodological consequences of postmodernism paves the way for using the mixed method just for pragmatic reasons without concerning any paradigmatic issue. Whereas scientific research is a holistic process. And maintaining this integrity requires maintaining the consistency between philosophy, methods and techniques.

To do this, let's get to know the mixed method more closely.

## **The Nature of Mixed Method**

A new methodology and a new methodological approach where both quantitative and qualitative data are combined and statistical tendencies are supported by individual stories are more common in social sciences research as in the health sciences since the late 1980s.

In fact, the earliest studies began in 1959 by Campbell and Fiske, discussing how quantitative information from multiple sources can use psychological features in validity studies (cited in Creswell and Plano Clark, 2015, p. 25). Later, Denzin (1978) studied combining quantitative and qualitative data sources, and Campbell (1974) and Cronbach (1975) studied how to include qualitative data in quantitative empirical research. Sieber (1973) focused on combining survey and field research. Finally, Platten

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(1980) worked on “methodical mixes, and diagrammed the different combinations of these mixes (cited in Creswell and Plano Clark, 2015, p. 25). These are the first precursors of the mixed method, as Creswell points out, in the future, which will be carried out through more systematic initiatives and made into a separate research design and a separate research approach.

These systematic early studies continued from the late 1980s to the early 1990s. Brewer and Hunter (1989) in the field of sociology in the USA, Greene, Caracelli and Graham (1989) in the field of evaluation, Creswell (1994) in education, Fieldings (1986) in sociology in the UK and Bryman (1988) in management. He is the pioneer of studies that critically address the use of qualitative methods individually and alone and aim to combine them into a new approach.

Starting from the earliest period, throughout these discussions, very different names for the mixed method have been proposed and used. Combined research (Steckler, McLeroy, Goodman, Bird and McCornick, 1992; Creswell, 1994); quantitative and qualitative methods (Fielding and Fielding, 1986); hybrid research (Ragin, Nagel and White, 2004); methodological pluralisation (Morse, 1991); mixed methodology (Tashakkori and Teddlie, 1998) and mixed research (Onwuegbuzie and Leech, 2009). Each of these naming and defining efforts focuses on different aspects of the mixed method. Some try to describe it as a research method, while others try to define it in discussions of research design and paradigm.

Creswell and Plano Clark (2015, pp. 9-10) try to explain the reason for using mixed methods by pointing out that the interest in the mixed method in social science is not limited to certain subjects and fields of study. Accordingly, the rationale for using the complexity of the social situation, the qualitative methods in which participants try to convey the details of the non-one-dimensional perspective and the relationships between variables and quantitative methods that try to reveal more general tendencies, seeing different aspects of the same social phenomenon and combining different perspectives of the same social phenomenon. the effort. Thus, the weaknesses of both quantitative and qualitative methods will be supported by each other and the strengths of both will be combined. In other words, these weaknesses of qualitative methods, which allow qualitative methods to examine a small number of participants in their own contexts but decrease the capacity to generalize the results, or even often eliminate them, will be compensated by each other for the quantitative methods where originality, contextual understanding decreases and strong generalizations eliminate individual differences. In other words, it will go beyond just answering a question with numbers or words. The combination of both data types, which are now a must, should be a powerful research on its own. Teddlie and Tashakkori (2015, 41) state that Mixed Method Research enables both qualitative and quantitative approaches to address both confirmatory and exploratory questions at the same time.

## **Paradigmatic Challenges**

According to the definition of Greene, Caracelli and Graham (1989, p. 256), which made one of the first definitions of the mixed method design, these studies should contain at least one quantitative method and at least one qualitative method, and no type of method should be connected to any research paradigm. According to Tashakkori and Teddlie (1998), this “paradigmlessness abilir could be explained as the combination of quantitative and qualitative approaches of a working method.

In the 90s, when the tendency to use mixed methods increased gradually, efforts to define the mixed method were carried to an advanced dimension. Methodological discussions on these early identification attempts have become important. It is no longer a paradigm, but a new research paradigm. Again, Tashakkori and Teddlie (2003) describe this combination tendency as a separate methodological formation



with worldview, vocabulary and techniques. In this attempt to define, the researchers have been thinking about what is blended in the mixed method, what is combining in the research process, and how much will be combined, and tried to make clearer and more defined definitions that are more common. Now not only the method but also the philosophical orientation is defined:

“Mixed method research is both a research design with philosophical assumptions and a research orientation. The mixed method as a method involves a mix of qualitative and quantitative approaches in many stages of the research process, and philosophical assumptions that guide the management of data collection and analysis. As a method, it focuses on the collection, analysis and collation of both qualitative and quantitative data in a single study or a series of studies. The main premise is the use of both qualitative and quantitative data, and to provide a much better understanding of the research problem than any method used alone.” (Creswell and Plano Clark, 2015, p. 6)

This definition reveals an attempt to combine methods, philosophy, and research pattern orientation. But it is far from being a concrete definition of a mixed method that everyone will agree on. The authors think that in addition to this definition, summarizing the research components of the mixed method will clarify the boundaries of this definition and make it more common. In an effort to identify these components, the components of the mixed method are presented in the titles of data collection, collation of data, analysis, philosophy and pattern. These components are:

- “Collection of both quantitative and qualitative data based on research questions.
- Blending these two types of data either by placing one inside the other or sequentially placing one over the other. That is, integration or interconnection.
- Prioritize one or both types of data, according to research emphasis.
- Use only in one work or multiple stages of a work program.
- to frame these procedures within the framework of philosophical world views and theoretical perspectives.
- Combine these operations with a special research pattern that guides the study execution plan.”

However, it is seen that there are still important problems in the concrete operation of this procedure and every researcher using a mixed method develops a different approach. However, the biggest argument for our subject is the relationship between theory and research project in researches where mixed method will be used. Creswell and Plano Clark (2015, p. 23) use the theory in the research and include the inclusion of the theory in the project. This approach reveals an understanding of whether theory is pragmatically incorporated into any research process or not, as needed, within specific frameworks.

Tashakkori and Teddlie (2003) also argue that pragmatism is the best basis for mixed method studies. In fact, while the researchers in the social sciences and behavioral sciences generally divide them into three categories, they define quantitative research focusers working within the postpositivist / positivist paradigm as quantitarions. Qualitative research-oriented researchers are particularly qualified interested in narrative-type data and analysis. On the other hand, mixed methodologists, which emerge as the third methodological movement, deal with both numerical and narrative data and work within the context of the pragmatist paradigm (Tashakkori & Teddlie, 2015, p. 5).

Creswell (2013) explains the ontological, epistemological, methodological, axiological and rhetoric attitude of pragmatism in his *Table of Elements of Worldview and Their Meaning in Practice*. The Mixed Method Research investigates both single and plural realities ontologically. To achieve these singular and plural realities, it is “what works”. Therefore, both quantitative and qualitative data should be collected.

Creswell and Plano Clark (2015, p. 49) writes in the chapter entitled Best Worldview for the Mixed Method that a significant number of researchers have adopted pragmatism. Mertens, who proposes a transformative and libertarian paradigm for the mixed method, and Maxwell and Mittapalli, who propose to treat the mixed method in a critical realist perspective, draw attention among the others.

Pragmatism constructs a paradigm that deals with the research problem before the paradigm problems. “The research problem is more important than the research method or the philosophical worldview underlying it. Indeki Another approach is that multiple paradigms can be used in the mixed method. The third perspective, adopted by Creswell and Plano Clark, says that multiple paradigms can be used, but this is more about the type of mixed method pattern than a methodological position.

“In the views of the authors of this book, worldviews are related to the types of research patterns. Worldviews can change during a study and the worldviews can be linked to different stages within the project. For this reason, researchers should respect the worldview they use and write explanations about it.” (Creswell and Plano Clark, 2015, p. 52)

If the authors are an all-encompassing worldview, it is only possible if the researcher collects quantitative and qualitative data at the same stage and combines these two databases. The pluralistic stance that allows the collection of all data types is pragmatism. Within this framework, the theory is considered as a literature review or a conceptual model to help explain what the researcher wants to find in the study (Creswell and Plano Clark, 2015, p. 53). The two main features of pragmatism are described by Johnson and Onwuegbuzie (2004, p. 18) as follows: 1- Rejection of one or the other between constructivism or postpositivism. 2- Finding practical answers to many problems that make the researcher difficult.

The most striking point in all these pragmatist approaches is that the paradigms are taken as philosophical approaches that can be taken at any time and discarded at any time and that can be easily changed within the research practice. The theories which are constructed in accordance with certain philosophical assumptions and determine the research design from the question to the method and technique are as if they are insignificant details in the research. The methodological complexity experienced in today’s communication studies and the breaking of the practice of producing critical information are fed from such a position.

Yes, we want to make a holistic explanation of the social world in communication. Yes, we do not want to limit ourselves to only quantitative or qualitative designs, methods, we want to benefit from all data sets. But how much can such an approach contribute to the solution of this problem of critical communication studies that breaks the link between philosophy and research practice? Or does it make the problem inextricable? How should the mixed method be handled and applied for critical studies?

## **A Critically Realist Critique of Pragmatists**

Maxwell and Mittapalli (2010), who propose critical realism as a standpoint as a mixed method, oppose the methodological pragmatists to show pragmatism as the worldview of the mixed method. Maxwell and Mittapalli, who criticized Pragmatists’ explanation that a research strategy or method is not necessarily linked to a single philosophical position, that the research could use one or more paradigms, considered this attitude as underestimating the role of philosophy in research. The authors emphasize that ontological, epistemological, and axiological assumptions affect researchers’ attitudes, and cannot be easily abandoned or altered. For this reason, Maxwell and Mittapalli state that critical reality is not the alternative paradigm for the mixed method, but the paradigm that should be preferred because it is the only paradigm that allows quantitative and qualitative methods to be used together.

The method has two dimensions. It has two dimensions, one is the abstract and the philosophical dimension, the two is the concrete dimension, which includes the organizer, the planner and the techniques. First, the method expresses a mental attitude independent of the research topic. Philosophically, the method is induction and deduction. The researcher's choice of a research plan in line with his / her philosophical understanding / philosophical view means that the conception of the abstract method becomes concrete. In terms of philosophy, which is an abstract attitude, the method becomes concrete and becomes a scientific method. At this stage, it also pluralizes in the field of research and depending on the object of study. They are research techniques that concretize the abstract attitude (Ergun, 2018, p. 17). Thus, abstract methods as mental research plans have become concrete when applied through research techniques (Ergun, 2018, p. 24).

This means that the method includes both data collection and analysis techniques on the one hand and philosophical approaches on which the research is based. Already the reason for the emergence of diversity of methods is the epistemological debates on the relationship between the subject and the object of scientific knowledge (Karapehlivan Şenel, 2012, p. 49). It should not be forgotten that there are different ontological assumptions on the basis of epistemological discussions. Because every epistemological approach is based on certain ontological assumptions.

Today, as in critical communication studies, the source of the confusion about methods in all social science researches is the disconnection between philosophy and research practice (Ergun, 2014). Research is based on the theory based on philosophical assumptions. Theory precedes the method.

“... for us, to avoid general theory is to give up, to give up the idea of knowing the truth as much as possible; in other words, to behave in such a way as not to start scientific research.” (Ergun, 2018, p. 83).

But,

“Without theory, scientific research cannot begin. Because scientific research can be started with an assumption. Without theory, assumptions cannot be established. (Ergun, 2018, p. 83).

Because the first effort of a scientist in all sciences is to combine theory with research (Ergun, 2005, p. 62).

Emphasizing that the theory serves to establish research assumptions, Aysel Aziz states that the field of knowledge is an abstract and symbolic dimension. Accordingly, the theory is a general proposition that leads to the formation of assumptions (Aziz, 2013, pp. 21, 227).

In other words, the theory is a system of proposals that explain the generality or general determinism of the observations, experiments, thoughts and scientific data of the centuries and present (Ergun, 2005, p. 62). As this acquired knowledge, the theory defines “what” and its reason (general existence, general essence, general relationship) and serves to establish research assumptions (Ergun, 2018, p. 57). Stating that the general theory provided by acquired knowledge has a generality seen in humans and societies, Ergun emphasizes that special assumptions can be established thanks to the general information provided by these generalizations, and that special scientific studies can be done in this way. According to him, in this way, theory-practice, that is, the unity of theory and practice is provided, there is no disconnection between theory and research (Ergun, 2018, pp. 83-84).

## **Understanding the Mixed Method Dialectically**

These difficulties and limitations can be overcome by handling the mixed method in a dialectical manner within the political economy approach. This can be constructed on a two-dimensional dialectical conception that Doğan Ergun (2014) developed by utilizing Lefebvre's Marxist conception of dialectics.

Ergun makes a distinction between basic / real methods and side / second / support methods. With this distinction, it is suggested that dialectic method must be the basic and real method of critical studies and as the first step of dialectic method, side / support methods must be used to examine the present situation of the phenomenon within the framework of the relationships of which it is also a part empirically. Doğan Ergun's conceptualization provides us a very important initiative that will enable the critical political economy approach to benefit from all methods of communication. The raw data collected by the secondary methods will be interpreted with the basic / primary / real dialectic method.

In this framework we suggest<sup>1</sup>, secondary and supportive positions, and dialectics of the main method will not cause a problem about the theoretical design of the research. Furthermore, as suggested in this study, the "integration" of two methods / convergence of approaches doesn't imply the simultaneous use of two separate quantitative and qualitative methods in a research and the separate analysis of the results. Decoster and Lichtenstein (2012, p. 398) suggest that rather than an eclectic integration, the interaction of the results of these two methods should be ensured. For example, in a quantitative research design, question-setting process can be guided by the analysis of data collected through qualitative means. A discussion on how to build a research paradigm that both of the methods may make differences, embody each other and make contributions to the communication researches can form a conceptual basis for minimizing the limitations of both qualitative and quantitative methods and bringing the strengths of them together (Decoster and Lichtenstein, 2012, p. 403). For example, quantitative methods can contribute to the depth of qualitative analysis and qualitative methods can reflect the voice of the participant in the wake of a survey (Decoster and Lichtenstein, 2012, p. 404). As Ergun (2014) suggests, defining the dialectical method as the main method of the research, and the research object provides an important basis not only for accepting all of the other methods pluralized in relation to the relationships of the studied object as secondary methods, but also for the interaction and enrichment of quantitative and qualitative methods.

Perfectly independent of, but in a similar way with the suggestion about the use of these methods as secondary or supportive methods utilized within a research design carried out by a dialectical method, Andrew Tudor (2005, pp. 417-418) states that in communication researches, specific methods developed both in mainstream impact studies and in the critical text analysis tradition will play a different role in analyzing within a specific methodological position:

Because various data types in various combinations can serve to trigger the defining process. ... quantitative data, systematic historical materials, psychoanalytic biased text interpretations, data obtained through interviews on reading processes, participatory observation of the observers, ethnographic 'detailed description'; all of these and others may perfectly be acceptable departure points for a realistic model construction (Tudor, 418).

We extend Tudor's suggestions of combining methods of influence research and the textual analysis tradition, and of using a combination of data or individually aggregated data with a perspective that handles both the convergence of quantitative and qualitative methods, and the use of all of these mixed methods within the dialectical method. This kind of an expansion would also eliminate both the tendency to make a distinction between the theory Splichal (1989b, pp. 335-336) emphasizes and the empirical research and the tendency to antagonize it.

According to Splichal (1989a, 625), who states that as well as the logic and assumptions of statistical analysis of the data, the relationship between quantitative and qualitative methods is misunderstood, if empirical data is approached within a critical theory, there is no way to fall into the trap of empiricism. For Splichal, one should not confuse the epistemological assumptions or research logic of positive science with the research logic of social structures and processes, or research methods and procedures. In social

science research (even if quantitative methods of positivist methodology are used), one will fall into the empiricism only when the theory-related stages are omitted. Because, according to Splichal, (1989a, 625) the problem is not in the method but in the assumptions on which positive social science is based.

While emphasizing that empirical attitude that meets the need for concrete data is as compulsory as the deductive attitude that meets the need for the concept of integrity in scientific method, Doğan Ergun (2014, p. 160) also points out exactly this kind of combinations.

It is now known that the method that includes deductive and empirical attitudes together is the dialectical method. Attempting to make explanations only through deductive schemes without making any research makes no sense other than stoning the ghost. And abandoning the deductive view and contenting themselves only with empirical research lead researchers to shallow and infertile results (Ergun, 2014, p. 160).

In other words, induction and deduction, analysis and synthesis are necessarily together. Rather than singing one's praise and mortifying the other, they should be considered as the things that complement each other depending on their importance and belong to each other (Erdoğan, 2007, p. 157).

This kind of a suggestion for communication studies carried out within critical political economy not only eliminates the questions regarding the use of quantitative methods, but also provides an important basis for interpreting descriptive or relational empirical data of the field / phenomenon by combining it with theory. It also offers an insight into political economical argument of "Explaining the social contexts of a communication process by showing how specific micro contexts are shaped by general economic dynamics and the broader structures on which they are based" (Golding and Murdock, 2002, p. 67). In other words, so as to enlarge analysis framework which is reduced to "media ownership" of critical political economy and to give it a content that meets its own claims... a methodological position can be developed against the influence of postmodernist claims that disintegrate information and reject holistic information within critical communication studies providing that cultural and micro-interaction areas are included in the analysis within the framework of political economy. However, rather than bringing the methods together eclectically, this duality can be overcome only when an important objection is raised against the assumption that political economy excludes the subject and micro interactions, and if, as a critique of the deterministic and reductionist interpretations of political economy, it is attempted to force political economy regain the subject. The proposed path is the dialectic method that interprets the micro's information by combining it with the macro's information. Therefore, for us, the way to overcome the methodological problems in the field is not a methodological reconciliation between critical political economy and cultural studies, but to expand the critical political economy to meet its own claims.

Golding and Murdock (2008) argue against the reductionist interpretations of critical political economy as they set its framework. This view determines its basic framework as an approach that doesn't concentrate only on the field of exchange and ignore the preferences and cultural practices of producers and receptors / consumers in the cultural processes, but handles this within broader structures and draws attention to the organization of property and production and interactions with these processes by explaining how the meaning production and consumption are shaped within historical and social relations. Therefore, political economy is far from being content with the descriptions of particular micro-contexts; on the contrary, it is an approach that tries to explain in which general social contexts and under which impacts micro-contexts emerge, develop and transform (2002, pp. 66-67). However, this approach, unlike the instrumentalists, shouldn't overlook the contradictions in the system, the possibilities of resistance of the consumers and the interaction with the structural processes by focusing on the strategic interventions of the owners, media professionals etc. Furthermore, it is also crucial to avoid from the different types of

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structuralism that accept structures as frozen and ignore that they are constantly reproduced, changed and moved through 'practical action' (Golding and Murdock, 2002, pp. 68-69). This approach should follow these three lines: 1- The line that focuses on "non-determinative" but "restrictive" effects of the production on the consumption in the production of cultural goods and so in the meaning production in terms of maintaining the power; 2- The research line that aims at revealing current representations in media products and their connections with the products and the material realities in the production and consumption processes; and 3- The research line that aims at revealing the role played by material and cultural inequality in the reception / consumption processes and the relationships between social context and consumption processes (2002, pp. 76-93). At this point, according to the framework Ergun proposes for social research, as the very first step of the methodology, studies examining the reception process in the context of collecting data with regard to all kinds of relations and appearances of the social phenomenon in capitalism's today may provide important empirical data for a holistic explanation.

## **CONCLUSION**

In critical studies, it is of course possible for the researcher to acquire the knowledge of the text and its reception processes without tending to neglect the social context by limiting himself/herself with the text and focusing on the moment and context. Some of the current approaches offer highly important opportunities in terms of contribution to the development of a position, which does not exclude the knowledge of the micro, but evaluates it through its determinations within its relations with the historical knowledge of the macro. With regards to the claims of this study, in order to overcome the methodological problems of the "critical studies", not only taking these current approaches into consideration, but also keeping the "class", the main category of the historical materialistic methodology in the center of the analysis, and expanding the critical political economy to include these approaches and making it more widespread and powerful in the field of communication seem crucial. In this sense, Bop Jessop's cultural political economy, Norman Fairclough's critical discourse analysis and social context, and critical ethnography studies, which take structural processes, especially production processes, to the center of the analysis, improve critical political economy considerably.

Furthermore, as the first step of Marx's dialectical method, it is necessary to understand the today's dialectical relations of the studied social phenomenon. When faced with the phenomenon in the research practice, this first step of the method requires the inclusion of the methods, which Ergun defines as side / supportive / secondary methods, into the research. At this point, the ground for the convergence of quantitative and qualitative methods is provided and its necessity manifests itself once again. Now it is possible to use the methods with different theoretical bases together in a certain theoretical and methodological approach. Accordingly, in order to collect the multidimensional data required for the analysis of the social phenomenon, all of the "necessary" methods should be used. Because as long as the researcher's method is dialectical, other auxiliary / supportive / secondary methods are applied for more practical purposes and the analysis becomes decisive on the method. This kind of an approach provides us a framework about the ways in which we can improve the mixed method in the dialectical method.

This framework can give us the tools we need to overcome the methodological challenges of economic political studies in the field of communication. Dialectically interpreting different data sets related to the knowledge of both objectivity and subjectivity, both structures and the individual can provide an important opening for methodological discussions within critical communication studies.

This understanding offers the opportunity to use the method in a critically realistic paradigm, apart from the influence of pragmatist approaches that break the link between philosophy and research practice and exclude theory from research practice. This paradigm is not an alternative but a must for those who want to use mixed methods in critical communication studies.

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## KEY TERMS AND DEFINITIONS

**Mixed Method:** Studies involving at least one qualitative and one quantitative method and not directly connected to the research paradigm of any method.

**Paradigm:** In science and philosophy, a paradigm (/ˈpærədɑɪm/) is a distinct set of concepts or thought patterns, including theories, research methods, postulates, and standards for what constitutes legitimate contributions to a field.

## ***Thinking Outside the Boxes***

**Scientific Method:** The scientific method, as applied to social sciences, includes a variety of research approaches, tools, and techniques, for collecting and analyzing qualitative or quantitative data. These methods include laboratory experiments, field surveys, case research, ethnographic research, action research, and so forth.

**Qualitative Research:** It is a type of research in which qualitative data collection methods such as Observation, Interview and Document analysis are used, perceived and a process in which realistic and holistic presentation of events in natural environment is followed.

**Quantitative Research:** A study can be conducted that presents facts and events in an observable, measurable and quantifiable way.

## **ENDNOTE**


- <sup>1</sup> This discussion on how to use the dialectical method concretely in critical communication studies has been conducted in my doctoral thesis, see (Etike, 2018).

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# Chapter 15

## The Movement of Mixed Methods Research and the Role of Information Science Professionals

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### ABSTRACT

*Mixed methods research integrates qualitative and quantitative research approaches in many or all phases of a study to comprehensively address a research problem by collecting quantitative and qualitative data concurrently or in phases with the aim to maximizing their inherent advantages while minimizing their disadvantages. Many disciplines are embracing mixed methods research. Library and information science research is lagging behind in the adoption and use of mixed methods research. That might be due to limited access to the literature on the subject or difficulties in dealing with the relative lack of consistency and incomplete coherence among mixed methods researchers. This chapter traces the common characteristics and designs of mixed methods research, its growth, and application in research. It provides a framework to design, execute, and evaluate mixed methods research studies so that library and information science researchers and researchers from other fields may play a role in its development and application.*

### INTRODUCTION AND BACKGROUND

Mixed methods research is gaining popularity as a result of its potential to investigate complex problems and provide a relatively comprehensive picture in instances where a single research method is unable to address the phenomenon. Consequently, many disciplines, including education, library and information science, management, health sciences, psychology and sport management are embracing it (Molina-Azorin & Fetters, 2016; Ngulube, 2013, 2016; Ngulube & Ngulube, 2015). Mixed methods research is

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suited for complex research problems comprising many components, or people and contextual factors that cannot be fully addressed by using one methodology. Mertens (2015) throws wicked problems such as “climate change, terrorism and conflict, social inequities, healthcare, educational access, and poverty” (p. 3) into the mix. Wicked problems are “replete with social and institutional uncertainties” and cannot be resolved by traditional research processes (Mertens, 2015, p. 3). Mixed method approaches can address wicked problems because of its capability to bring together diverse researchers and groups, and give them a common language to use in their investigation (Gomez, 2014).

Mixed methods research also “offers opportunities for innovation and multiple perspectives and insights to a phenomenon” (Cameron, 2013, p. 51), and provides “a way to work efficiently with the nuances of present-day research” (Morse, 2010, p. 340). It is recognised as a “third methodological movement” (Tashakkori & Teddlie, 2010a, p. ix) along with quantitative and qualitative methodologies. In a nutshell, mixed methods research contributes to building a better world as it is envisaged in the 17 Sustainable Development Goals (SDGs) of the United Nations as it offers the potential for a complete methodological toolkit for researchers, integrates expertise from across diverse research methodologists, engages stakeholders and involve them in creating knowledge, produces evidence that resonates, and helps researchers to evaluate, demonstrate and disseminate the impacts of their research (Molina-Azorin & Fetters, 2019). However, “the developing world is not highly visible in publications regarding or involving mixed methods” (Tashakkori & Teddlie, 2010b, p. 33).

Although Creswell and Tashakkori (2007a) recommend that one should read the literature that has emerged since 1979, one should aim at reading the literature after 2010 due to the nature of the evolution of mixed methods research. The assumption is that the years 2000 to 2009 were the advocacy and expansion phase in the development of mixed methods research (Creswell & Plano Clark, 2011). That implies that issues such as nomenclature and basic definitions, methodological principles sampling, data analysis and drawing inferences, and the structure of mixed methods research were consolidated after that period. According to Creswell and Plano Clark (2018), the period reflected on the controversies and issues of concern in mixed methods research, mapped mixed methods literature and presented new paradigms for mixed methods (for example, Mertens, 2007, 2015). Works published earlier than 2010 must be read with caution, although they form a basis of understanding mixed methods research.

The adoption of mixed methods research has been limited in fields such as agriculture (Akimowicz et al., 2018) education, nursing, psychology and sociology (Alise & Teddlie, 2010), economic and management sciences (Ngulube & Ngulube, 2015), knowledge management (Ngulube, 2019) and organisational science (Gibson, 2016). The problem of the researchers’ uncertainty about how to “actually do mixed method research” seems to be universal (Morse, 2010, p.340). That is partly due to the existence of inconsistencies and variations within mixed methods research (Denscombe, 2008, Creamer, 2018). Some researchers think that any study that involves both qualitative and quantitative methods is mixed methods research (Morse, 2010; Romm & Ngulube, 2015). It is going to be demonstrated later that mixed methods research is more than just including a bit of qualitative data with quantitative data in one study. Furthermore, the purpose for mixing and the type of mixed methods research design used should be clearly specified. In fact, Creamer (2018) avers that viewing mixed method research as merely combining qualitative and quantitative research methods, is failing to realise the full potential of the methodology. In other words, qualitative and quantitative research methods should be combined at all stages of the research process, including formulating the problem, reviewing the literature, designing the research analysis data and drawing inferences for a study to be different from a multimethod one as discussed later.

The uptake of mixed methods research in library and information science (LIS) research has been low due to various reasons, including difficulties in conceptualising the practice of mixed methods research. The difficulties of distinguishing between multimethods and mixed methods research, and using appropriate mixed methods research approaches can partly explain why the use of mixed methods research is limited in LIS research (Fidel, 2008; Ngulube, 2010; 2013; Ngulube & Ukwoma, 2019; Ukwoma & Ngulube, 2019; Ullaha & Ameen, 2018). However, Ma (2012) pointed out that LIS is a complex field that calls for the use of mixed methods to provide a comprehensive and “richer understanding of information and information-related phenomena” (p. 1866). It was in light of the low prevalence of the utilisation of mixed methods research in LIS research, and a need to shed more light on the essence of mixed methods research and support the third methodological movement whose time has come, that this chapter was conceptualised. This chapter gives guidelines on what constitutes mixed methods research so that information science professionals may play a role in its utilisation to get a comprehensive understanding of their information science environment.

The objectives of this chapter are to do the following:

- Provide different perspectives about the definition of mixed methods research.
- Distinguish between mixed methods research, multimethod research and quasi-mixed methods research.
- Illustrate the place of mixed methods research in the methodological landscape.
- Identify the common mixed methods research approaches.
- Outline the use of theory in mixed methods research.
- Describe sampling and data analysis techniques in mixed methods research.
- Advocate for the use of mixed methods research in LIS.

The remainder of this chapter is structured as follows. The following section looks at the genesis of mixed methods research up to the time it was considered a third methodological movement. Next, the common mixed methods research approaches, use of theory in mixed methods research, sampling in mixed methods research and conducting mixed analyses are outlined. The last section presents the role that library and information professionals can play in promoting mixed methods research.

## **GENESIS OF MIXED METHODS RESEARCH**

The use of multimethods can be traced to the notion of multitrait-multimethod matrix of psychological traits espoused by Campbell and Fiske (1959). Webb, Campbell, Schwartz and Sechrest (1966) and Denzin (1970) further developed the concept of the multitrait-multimethod matrix into triangulation. Triangulation was the forerunner of mixed methods research. Gradually, many scholars recognised that qualitative and quantitative approaches were not diametrically opposed and divergent. Scholars such as Greene, Caracelli and Graham (1989) and Creswell (1999) occupy a special place in the timeline of the development of mixed methods research resulting in it evolving “to the point where it is a separate methodological orientation with its own worldview, vocabulary, and techniques” (Tashakkori & Teddlie, 2003, p. x). The 1950s to 1980s were considered the formative years of mixed methods research (Creswell & Plano Clark, 2018). Mixed methods researchers should be aware of the evolutionary stages of the methodology for them to use mixed methods terminology with hindsight.

The 1980s through the 1990s witnessed the increasing challenge to the incompatibility thesis (Creswell & Plano Clark, 2018). Ridenour and Newman (2008) stated that to consider qualitative and quantitative approaches as distinct and distinguishable in practice was a “false dichotomy” (p. 2). On one hand, Creswell (2011) explained it as “a binary distinction that doesn’t hold in practice” (p. 272). Increasingly, there was a growing acceptance that the two approaches were a continuum with overlapping points. This put paid the “science wars” (Morgan, 2007, p. 56), “paradigm wars” (Alise & Teddlie, p. 103), “paradigm debates” (Teddlie & Tashakkori, 2009, p. 15), or the great quantitative-qualitative debate and the incompatibility and *purist* debate. The purists viewed the two approaches as incompatible because of the philosophical assumptions upon which they were based (Creamer, 2018; Tashakkori & Teddlie, 1998).

The admission by research methodologists that quantitative and qualitative approaches intersected at the centre of a methodological continuum led to the weakening of the incompatibility debate (Creamer, 2018). This implies that the strength of both approaches merged at the intersection, and the value-added of mixed methods emerged. The reconciliation of the interpretivist and positivist logic of inquiry constituted a paradigm shift. The paradigm shift culminated in the emergence of mixed methods as a distinct third methodological movement in the late 1980s/beginning the 1990s (Akimowicz et al., 2018; Creamer, 2018). That ushered in an epoch of the development of procedures, typologies and the application of mixed methods research in specific disciplines. This was followed by the reflection and refinement period at the turn of the 21<sup>st</sup> century.

Tashakkori and Teddlie (2010b) raised nine questions during the reflection period while Creswell and Plano Clark (2018) raised eleven questions, which are:

- The definition of mixed methods research.
- The language and designs of mixed methods research.
- Core characteristics of mixed methods research.
- The use of qualitative and quantitative nomenclature in describing the methodology.
- The appropriateness of mixing paradigms and developing an acceptable paradigm.
- The dominance of the positivism and the marginalisation of interpretivism.
- The value-added of mixed methods research.
- The analytical techniques support limited integration.
- Making sense of the findings and credibility of conclusions.
- How a researcher becomes a methodological connoisseur.
- Maintaining a “core identity” of mixed methods.

Going back to the formative years, it is clear that triangulation was the last straw that broke the camel’s back (that is, paradigm war). Triangulation enhanced validity between-or-across method comparisons (Denzin, 1978). Convergent validity is produced when two or more research methods or approaches produce comparable results. Within methods, comparison is closer to multimethod studies than mixed methods research. Within methods triangulation involves, for example using an experiment and survey to seek corroboration of results from the other approach. That can also apply to a qualitative environment where a case study may be used with phenomenology as an example to enhance the trustworthiness and credibility of the findings. Across-or-between methods comparisons are close to mixed methods research because it combines methods from both qualitative and quantitative research methods.

The legitimization of mixed methods research witnessed the emergence of a number of models used to categorise the purposes of mixed methods research. Rossman and Wilson (1985) described three

purposes of combining quantitative and qualitative research between research methods. They included corroboration, elaboration and initiation. Studies conducted for the purpose of initiation provoke further exploration of the phenomenon under study. The convergence of results from different research methods is achieved through the elaboration typology. The next framework was formulated by Greene et al. (1989) after analysing mixed methods research approaches used in 50 studies. They added two designs of mixed methods studies to those of Rossman and Wilson (1985). Their purposes of mixing included triangulation, complementarity, development, initiation and expansion. Complementarity is equivalent to elaboration in the typology of Rossman and Wilson (1985). On the other hand, Bryman (2006, 2007) came up with 17 reasons for mixing. Creamer (2018) stated that seven of the rationales of mixing given by Bryman (2006, 2007) can be grouped under the labels provided by Greene et al. (1989). Ridenour and Newman (2008) identified three mixed methods designs: sequential, simultaneous, and the interactive continuum.

Despite the existence of many design types, the framework of Greene et al. (1989) has remained popular along the typology of (i) Creswell and Plano Clarke (2011), which included explanatory, exploratory, convergent, embedded and multiphase designs and (ii) Teddlie and Tashakkori (2003), comprising six types of multi-strand mixed method and mixed model studies with procedures that are concurrent, sequential and conversion (Cameron, 2013). The typology of Creswell and Plano Clarke (2011) is discussed in detail before the conclusion of the chapter. Creswell and Plano Clarke (2011) dropped triangulation from their typology. However, triangulation that was popularised by Greene, Caracelli and Graham (1989) as a mixed methods research approach or design remained in the mixed methods research discourse until 2014. Fetters and Molina-Azorin (2017) confirmed in the prestigious *Journal of Mixed Methods Research* that triangulation was not an appropriate term to describe the mixed methods research approaches. That was partly because triangulation, “has multiple meanings and lacks sufficient clarity and precision” (Fetters & Molina-Azorin, 2017, p. 7). Morgan (2019), one of the forerunners of mixed methods research, agreed that it was high time that methodologists bade farewell to triangulation as an mixed methods research approach or design.

## **Mixed Methods Research in the Methodological Continuum**

The placement of mixed methods research in the methodological landscape is given in the interest of methodological transparency and clarifying terms used in this rather slippery landscape (Ngulube, 2019). Methodological transparency promotes replication (Creamer, 2018) and a research audit trail. The methodological framework given in figure 1 provides shorthand to understand the terms used in this chapter. Borrowing from Ngulube’s (2019) design, methodologies, approaches and research techniques represent different levels of conceptualising the research procedures (with the design being at the highest level, followed by methodologies and the approaches that fall under them and then the research techniques used that fall within a given approach. These terms are not interchangeable in this chapter and their distinctions can be helpful with respect to understanding the terms used in this chapter. When using these research methodological levels, whole systems of the methodological levels should be conceptualised as part of the overarching research design. Stated differently, the design include the key elements of the research process from “identifying the purpose to conducting the analysis and conclusions” (Creamer, 2018). Following Ngulube (2019), we use the term “approach” instead of “design” to refer to common mixed typologies described by Creswell and Plano Clarke (2018) as mixed methods designs (e.g., explanatory mixed methods design).

At the highest level, the design is influenced by philosophical assumptions, that is, assumptions about knowledge, including ontology, epistemology, axiology and methodology. Creamer (2018) stated that practitioners are not as worried about philosophical assumptions as methodologists. This may partly explain why methodology is no longer considered with the other foundation assumptions such as ontology and epistemology when discussing research paradigms. Philosophical assumptions are embedded in the research paradigm conceptualised by Kuhn (1970). It is important and “almost obligatory” (Creamer, 2018, p. 41) to discuss philosophical assumptions when discussing mixed methods research.

Firstly, mixed methods research emerged from the paradigm wars that were premised on the assumptions that realism and constructivism were different and incompatible when addressing research questions. Secondly, there are a variety of philosophical assumptions that may serve as a foundation of mixed methods research. For instance, Onwuegbuzie and Combs (2011) describe pragmatism and transformative-emancipatory as one of the existing mixed methods research paradigms. Thirdly, paradigmatic foundations of mixed methods research design was one of the topical issues in development of the methodology (Tashakkori & Teddlie, 2010b). There is also debate on the suitability of pragmatism as the philosophical foundation of mixed methods research. Some scholars have criticised the philosophy as too American and irrelevant to some other contexts (Creswell & Tashakkori, 2007b).

According to Ngulube (2019), realism, constructivism and pluralism are the major ontologies on which four elements of worldviews, (i.e. post-positivism, constructivism, transformative and pragmatism) presented by Plano Clark (2018) are based. Constructionism and transformative worldviews are variants of the ontology of constructivism. The difference between the two worldviews is that the latter is rather ideological and advocates the voices of the underprivileged underrepresented groups. The epistemology of a mixed methods researcher is pragmatism, although other authors such as Onwuegbuzie and Combs (2011) and Mertens (2007, 2015) stated that it was the transformative one. Pragmatism is best suited for the methodology (Ivankova, 2015; Tashakkori & Teddlie, 2003). Morgan (2007) confirms that position. The pragmatic stance distinguishes mixed methods research from traditional quantitative and qualitative methodologies. The pragmatic stance has distinctive ideas and practices that set it apart from positivism and interpretivism. Pragmatism put an end to paradigm wars and the incompatibility thesis, thus rendering the “quantitative versus qualitative” dichotomy redundant. It made research methodologists to realise that research methodologies operated in a research continuum rather than in distinctive compartments even if their characteristics differed. The development from the confrontational stance among the methodologies to a position of comprise is discussed in the next section.

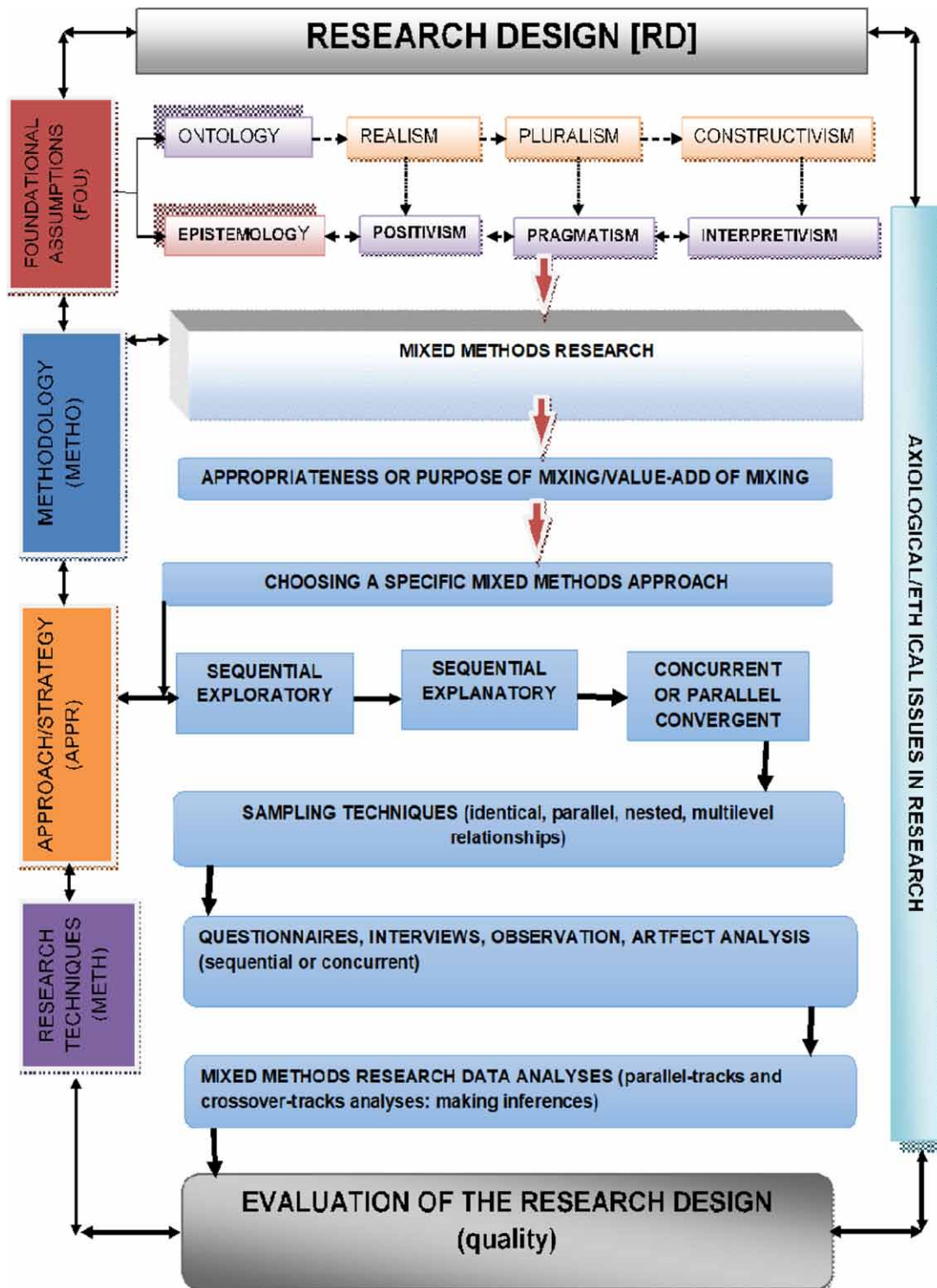
In line with Figure 1, a mixed methods researcher needs to decide on the appropriateness of mixing and a specific mixed methods research once the philosophical assumptions have been established. All the research methods choices would be based on ethical considerations discussed in the other chapters.

### **Mixed Methods-Multimethods Debate**

Mixed methods research emerged from the 1990s onwards and established itself as a third methodology along qualitative and quantitative methodologies (Denscombe, 2008). Although mixed methods research is gaining currency, there is no unanimity in the mixed methods research community as to what term to use to describe it; for instance, mixed methods research has been variously referred to as multimethod research, multiple methods, mixed methodology, blended research and mixed research (Tashakkori & Teddlie, 2010). The term multimethod “has been largely discarded in mixed methods research” (Tashakkori & Teddlie, 2010b, p. 21) as it has been superseded by approaches that recognise the paramountcy of the integration across the entire research process.



Figure 1. Mixed methods research in the methodological landscape



According to Creswell (2016b) and Creamer (2018), the difference between mixed methods research and multimethods research must be preserved because they are different. Indeed, there is a difference between mixed methods and multimethods. Multimethod research is the use of more than one method involving multiple qualitative or multiple quantitative methods, or qualitative and quantitative methods in combination. Mixed methods research involves more than simply collecting two types of data. Studies that merely collect qualitative data without integrating the two databases from the qualitative and quantitative strands have been referred to as “eternally parallel” studies (Creamer, 2018, p. 18). Integration is the central characteristic of mixed methods research and it is a “distinguishing factor that separates mixed methods from all other methodologies” (Creswell, 2016b, p. 218). However, “while there seems to be strong agreement that some form of mixing is mandatory to meet any minimal definition, there is still a pull and tug of what this should look like and the strategies that can be used to execute it” (Creamer, 2018, p. 18).

Therefore, mixed methods research is a “distinct methodology, beyond the mere inclusion of both quantitative and qualitative methods in a study” (Mertens et al., 2016a, p. 2). The study should include and integrate a deductive and an inductive element in many phases of the research process for it to be considered to be mixed methods research. Creamer (2018) and Small (2011) distinguish between methods and methodology. The two authors warn researchers against falling into the trap of using the term method to distinguish qualitative and quantitative research because they are more than just a method.

Distinguishing between mixed methods or multimethods and mixed methods research is helpful for researchers initiating their first mixed methods study. Tashakkori and Teddlie (1998) suggested that the term Mixed Methodology was more appropriate than mixed methods. Precision and consistency in the use of terms is essential for an emerging field such as mixed methods research.

However, Creswell (2016b) warned that there should be flexibility in the use of terms as long as the distinction between the multimethods and mixed methods is made clear. It is important to not become rigid in the conceptualisation of mixed methods because: “having the term not cast in stone is intellectually useful and allows for reshaping understandings” (Guba, 1990, p. 17). While it is important to determine the taxonomy of the research design that the researcher uses for planning and conducting a study as advocated by many scholars, (for example, Creswell & Plano Clark, 2007, 2018), it may suffice to focus on a certain perspective and use it to justify the use of mixed methods research. It is important that researchers are clear about the perspective they are using right from the start of the conceptualisation of the study. The purpose of mixing and the approach or design used should equally be articulated and matched with.

Ultimately, the value-added of mixed methods research must be clearly stated as it relates to the study and the mixed methods research perspective of choice. Explicitly identifying the value-added of mixed methods research contributes to methodological transparency (Creamer, 2018). In other words, researcher should clearly outline the insight gained by using mixed methods research at the end of the study. For instance, Xiao (2019) used a sequential explanatory mixed methods research approach in a study of the ways in which digital divides articulate status and power in China because neither a quantitative nor qualitative methods alone was going to provide “a satisfying picture of students’ digital lives across such geographically, culturally, and socioeconomically diverse groups of students” (p. 5).

## **Perspectives and Definitions of Mixed Methods Research**

The definition and conceptualisation of mixed methods research is fraught with controversies and contestations. Different definitions have been proffered, providing the answer to the question as to “what is exactly mixed” has remained elusive (Creamer, 2018, p. xix). It is evident from Table 1 that the perspectives on the definition of mixed methods research have continued to develop since it emerged as a third methodological movement in the 1980s. That is partly due to differing perspectives on mixed methods research. These perspectives may disappear as the field matures.

Creswell and Tashakkori (2007b) identified four perspectives used by scholars when writing and discussing mixed methods research. They include the method perspective which emphasises on the process and results of utilising both quantitative and qualitative methods and types of data. This perspective is close to methodological triangulation discussed in the previous section. The focus of this perspective is on the development and use of strategies for collecting, analysing and interpreting various types of qualitative and quantitative data. The foundational assumptions of research are not brought to bear in this perspective. The sole use of two types of data, or two data collection methods does not make these studies fully mixed methods research inquiries. Teddlie and Tashakkori (2009) described such studies as “quasi-mixed”.

The methodology perspective views mixed methods research as a distinct and separate methodology that incorporates all phases of the research process including research questions, foundational assumptions, approaches, methods, ethics and conclusions. Several mixed methods research scholars advocate this perspective. It is the agenda of this perspective that should be put on the table if mixed methods research is indeed a third methodological movement on par with qualitative and quantitative methodologies. Tashakkori and Teddlie (2003) stated that mixed methods research is “a distinct third methodological movement” (p. 24), implying that the methodology goes beyond the use of qualitative and quantitative methods without the integration of the qualitative and quantitative datasets.

The paradigm perspective views several worldviews, or an overarching worldview as providing a philosophical foundation of mixed methods research. Morgan (2007), one of the proponents of this perspective, pointed out that pragmatism is the philosophical foundation of mixed methods research. Some other paradigm perspectives such as the transformative perspective with social justice ends (Mertens, 2007) have emerged owing to the fact that pragmatism is viewed as an American perspective with limited bearing on worldviews in other parts of the world. Creswell and Tashakkori (2007b) were surprised that the question of the use of paradigms was an issue. The question of paradigms should not be an issue because the worldviews may change during a study. For instance, in a sequential exploratory study, which we are going to discuss later, research moves from an interpretivist perspective to a positivist epistemology. Multiple perspectives are the foundation of mixed methods research.

Finally, in the practice perspective, mixed methods research is viewed as a set of procedures used in the conduct research. This perspective follows a “bottom up” style (Creswell & Tashakkori, 2007b). Researchers embrace new methodological approaches as they conduct their studies. They take a pragmatic approach to use what works.

It is apparent that various perspectives of mixed methods research address mixing at certain stages of the research study and others consider mixed methods research as a holistic perspective that integrates the qualitative and quantitative approaches throughout the research process, namely planning and design, data collection, sampling and analysis and drawing inferences (Creamer, 2018; Teddlie & Tashakkori, 2009). Researchers should guard against adopting a perspective that may limit the full potential of mixed

methods research. Some perspectives may fail to give a holistic and comprehensive picture of the phenomenon under study at all stages of the research process. Whatever perspective the researcher uses, it is important to clearly state and reflect about the contribution of the qualitative and quantitative aspect to the study and why it was important to use both aspects. Researchers should familiarise themselves with the key methodological literature from the early adoption of mixed methods research to the recent times to ensure that they do not have conceptual problems in its application and how it has developed.

Table 1 illustrates the conceptualisation and definition of mixed methods research from various perspectives since the 1980s. Some of the definitions in Table 1 seem to be taking us back to the period of multimethods. They either sidestep the issues of paradigm or methodological strands. Consequently, Creswell (2016b) has some misgivings about the definition given by Mertens et al. (2016a), which includes the term “method”. We agree with Creswell (2016b) as illustrated in the discussion of multimethods research and mixed methods research in the preceding paragraphs. There is a distinction between multimethods and mixed methods research. Although Mertens and colleagues (2016a, p. 4) advocate the use of “mixed methods” as the generic term for both multimethods research and mixed methods research with differing definitions depending on the context in which it is applied, it is clear that the level of mixing in the former is elementary than in the latter where integration takes the centre stage and occurring across many phases of the research process.

The more the studies integrate qualitative and quantitative approaches across the phases of the research process, the more the study may be regarded as mixed methods research rather than multimethod research (Yin, 2006). The study is likely to be multimethods rather than mixed methods research if the analytical strategy is not both deductive and inductive. At the end of the day mixed methods research studies should include a deductive (general to the specific) and inductive (specific to general) components. These are the minimum elements of a mixed methods research study (Creamer, 2018). The approach to data analysis should also exhibit these elements.

According to Creswell and Plano Clark (2011), mixing should occur in at least one phase. Creamer (2018) considered the way that Creswell and Plano Clark (2011) described integration as quite conservative (p. xix). On the other hand, Greene (2007) posits that mixing the qualitative and quantitative strands should occur at all stages of the research process. This view resonates with the position adopted by Teddlie and Tashakkori (2009). In agreement, Creamer (2018) emphasised the fully integrated mixed methods that involve the mixing of both the qualitative and quantitative strands throughout all the stages of the research project. Creamer (2018) cites the study of Durksen and Klassen (2012) as a good example of a fully integrated mixed methods research study. The reader is referred to the study as an illustrative example.

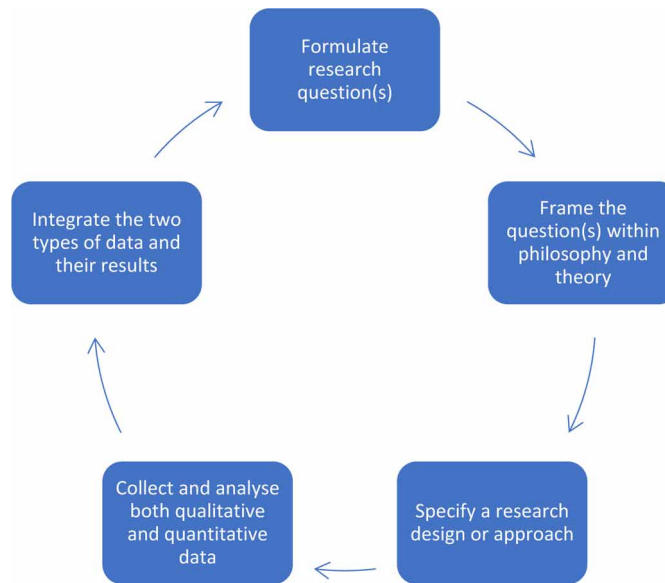
Despite the seemingly differing aspects of the definitions of mixed methods research among scholars, there is a consensus on core elements of a definition of mixed methods research (Creamer, 2018). There is agreement on the centrality of mixing or integration as a distinguishing factor of mixed methods research (Creswell, 2016b, p. 218) and the assumption that it is both a method and a methodology (Creamer, 2018; Creswell, 2016b). Notwithstanding that mixed methods research is still evolving, it is a methodological orientation “with its own worldviews, vocabulary, and techniques” (Tashakkori & Teddlie, 2003, p. x).

It is tempting to accept certain variants and imitations of mixed methods, but there is need to be cognizant of how mixed methods research has developed to be recognised as a third methodological wave in the development of the scientific method. There is nothing wrong with accommodating other variants of mixed methods, but the core characteristic of mixed methods research should always be maintained in the research process (see, Creswell, 2015; Creswell & Plano Clark, 2018). Following Creswell and Plano Clark (2018), figure 2 outlines five major features of mixed methods research practice.

*Table 1. Conceptualising mixed methods research*

<b>Definition</b>	<b>Mixed methods research perspective</b>
Mixed methods involves combining or integration of qualitative and quantitative research and data in a research study (Creswell, 2014, p. 14).	Methods, methodology
Mixed methods designs are those that include at least one quantitative method (designed to collect numbers) and one qualitative method (designed to collect words), where neither type of method is inherently linked to any particular inquiry paradigm (Greene, Caracelli & Graham, 1989, p. 256).	Methods
Mixed methods designs combine qualitative and quantitative research methods in one study to address research questions (Moule, 2018, p. 79).	Methods
Mixed method includes the use of more than one method of collection, analysis, interpretation and reporting of data; it is a mix between the qualitative and quantitative approaches (Wiid & Diggins, 2015, p. 65).	Methods, methodology
Mixed methods is a research design with philosophical assumptions as well as methods of inquiry. As a methodology, it involves philosophical assumptions that guide the direction of the collection and analysis and the mixing of qualitative and quantitative approaches in many phases of the research project. As a method, it focuses on collecting, analysing, and mixing both qualitative and quantitative data in a single study or series of studies. Its central premise is that the use of quantitative and qualitative approaches, in combination, provides a better understanding of research problems than either approach alone (Creswell & Plano Clark, 2007, p. 5).	Methods, methodology, paradigm
Mixed methods research is an intellectual and practical synthesis based on qualitative and quantitative research; it is the third methodological paradigm (along with quantitative and qualitative research) (Johnson, Onwuegbuzie & Turner, 2007, p. 129).	Methodology, paradigm
A mixed methods way of thinking is an orientation toward social inquiry that actively invites us to participate in dialogue about multiple ways of seeing and hearing, multiple ways of making sense of the social world, and multiple standpoints on what is important and to be valued and cherished (Greene, 2008, p. 20).	Paradigm, practice
The term mixed methods has developed currency as an umbrella term applying to almost any situation where more than one methodological approach is used in combination with another, usually, but not essentially, involving a combination of at least some elements drawn from each of qualitative and quantitative approaches to research (Bazeley, 2008, p. 133).	Methodology
Mixed methods research is the type of research in which the researcher or team of researchers combines elements of qualitative and quantitative research approaches (e.g., use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the broad purposes of breadth and depth of understanding and corroboration (Johnson, Onwuegbuzie & Turner, 2007, p. 123).	Methodology
A fully integrated mixed methods research is “an approach to mixed methods research where there is the intention to mix or integrate the qualitative and quantitative strands of study throughout each of the stages or phases of the research process” (Creamer, 2018, p. 12).	Methodology
A mixed methods research design is a procedure for mixing both methodologies in a single study to obtain evidence needed to provide a deep understanding of the research problem (Baran, 2016, p. 67).	Methodology
Mixed methods combine qualitative and quantitative approaches in the methodology of a study (such as in the data collection stage), while mixed models studies combine these two approaches across all phase of the research process (such as conceptualization, data collection, data analysis and inference) (Tashakkori & Teddlie, 1998, p. ix-x).	Methodology
Mixed methods research is “practical” in the sense that the researcher is free to use all methods possible to address a research problem. It is also “practical” because individuals tend to solve problems using both numbers and words, they combine inductive and deductive thinking, and they (e.g., therapists) employ skills in observing people as well as recording behaviour (Creswell & Plano Clark, 2007, p. 10).	Practice
Mixed methods is the use of more than one method, methodology, approach, theoretical or paradigmatic framework and integration of results from those different components (Mertens et al., 2016a, p. 2).	Practice, method, methodology, paradigm
Mixed methods research is an intellectual and practical synthesis based on qualitative and quantitative research; it is the third methodological or research paradigm (along with qualitative and quantitative research) (Akimowicz et al., 2018, p. 162)	Practice, methodology, paradigm

*Figure 2. Five major features of mixed methods research practice*



Other mixed methods should exhibit these core characteristics to guard against going back to using mixed methods procedures, which were prevalent during the formative years of mixed methods research.

### **Rationale for Using Mixed Methods Research in a Study**

Mixed methods research is not essentially superior to research that rely on a single methodology. The major advantage of mixed methods research is that it can answer the questions that other methodologies cannot (Teddlie & Tashakkori, 2003). Mixed methods research becomes useful when it best addresses the purpose for conducting the study or the research question(s) (Mertens et al., 2016a).

The research question is central to the research process and determines the specific methodology used to investigate reality. That partly explains why Tashakkori and Teddlie (1998) write about the “dictatorship of the research question” (p. 20). Research questions are the driving force for mixed methods research (Plano Clark & Badiee, 2010, p. 278). The question of how a mixed methods research question should be formulated remains unresolved (Tashakkori & Teddlie, 2010b), and so is its components and attributes. The purpose of a mixed methods study should indicate the need for and use of both quantitative and qualitative methods (Teddlie & Tashakkori, 2009). The researcher should have both exploratory and confirmatory questions. At least all mixed methods research studies include at least two questions – one qualitative, one quantitative (Teddlie & Tashakkori, 2009).

However, Mertens et al. (2016a) posit that research questions do not have to be mixed methods research from the onset because research questions do not always determine the research methods. This argument can be contested on the fact that research questions are derived from and extend a study’s purpose (Ridenour & Newman, 2008). Admittedly, research questions may emerge from the results and interpretation of the findings. In sequential designs, subsequent phases are informed by the results (Teddlie & Tashakkori, 2009). Furthermore, unexpected or anomalous results may also lead to sequential designs. Research questions may shape and may be shaped by methods in this instance. However, it is

logical that there will always be a research question to define and guide a study, although other questions may arise depending on the research design. In fact, “if you do not know what you want to know, you will not know how to find it out” (O’Leary, 2018, p.14).

When claiming to use mixed methods research, the key is to give a rationale or justification for why mixed methods research is more appropriate than qualitative or quantitative methodologies in addressing the phenomenon under study and the research problem (Creamer, 2018; Creswell & Plano Clark, 2018; Romm & Ngulube, 2015). Problems suited for mixed methods include those in which a single data source does not give sufficient answers. The mixed methods research community has suggested problems that may require mixed methods research (Bryman, 2006; Creamer, 2018), but Creswell and Plano Clark (2018, p. 8) have described the following as the major reasons:

1. A need to investigate a problem from more than one perspective to obtain more comprehensive and corroborated results.
2. A need to explain quantitative results.
3. A need to explore before developing an instrument.
4. A need to enhance an experimental study with a qualitative method.
5. A need to describe and compare different type of cases.
6. A need to involve participants, especially for the purpose of bringing change in their life.
7. A need to develop, implement and evaluate a programme.

Although many topics can be researched by using mixed methods research, there are instances where it might not be the suitable for a study. For example, instances where there is no match with the purpose of the study and the research questions calls for researchers to seriously reflect on the suitability of mixed methods research rather than forcing it into the project through the back door. Mixed methods research is not suitable for projects with a narrow focus, including confirmatory studies. Time and resource constraints should be considered before adopting a mixed methods research approach. Collecting and analysing both qualitative and quantitative data needs time, sufficient resources and expertise. Mixed methods research should be used with caution when a researcher is working alone as the quantitative and qualitative analytical expertise might pose some difficulties (Creamer, 2018; Creswell & Plano Clark, 2018; Romm & Ngulube, 2015).

## **COMMON MIXED METHODS RESEARCH APPROACHES**

The study’s goal, research objectives and research purpose are followed by choosing the appropriate mixed methods research design or approach. Design and approach are used interchangeably though the preferred term is approach as illustrated in figure 1. That was done to accommodate Creswell and Plano Clark (2018) who influenced the thinking behind this section. As demonstrated in the previous sections, there are a number of mixed methods research designs, or approaches, or strategies articulated in the literature. There have been numerous attempts to develop a framework for mixed methods research designs (Nastasi, Hitchcock & Brown, 2010). For instance, Tashakkori and Teddlie (2003) in their book alone described more than 30 mixed methods research designs. A lot of literature has been devoted to the conceptualisation of mixed methods research design typologies (Creamer. 2018; Creswell, 2015;

Hesse-Biber & Johnson, 2015; Leech & Onwuegbuzie, 2009; Tashakkori & Teddlie, 1998, 2010b; Teddlie & Tashakkori, 2009).

Time orientation is the major distinguishing characteristic of mixed methods research designs. The designs may be executed concurrently, (i.e., the qualitative and quantitative strands are conducted approximately at the same time), or sequentially (i.e., the qualitative and quantitative phases of the study occur one after the other). Phases of the study that are conducted concurrently are independent of each other, while sequential ones are dependent on one another. The timing of the phases largely depends on the purpose of mixing.

Over time, Creswell and Plano Clark (2007; 2018) simplified researchers' design choices by developing the following typologies: sequential exploratory, sequential explanatory and concurrent or parallel convergent. These have been described as basic simple designs, while complex (Ivankova & Kawamura, 2010) or advanced (Creswell, 2015) designs include intervention, social justice and multistage evaluation designs. Creswell and Plano Clark (2018) pointed out that convergent, explanatory and exploratory designs are the core mixed methods designs. These are the signature designs that are emerging, and "at the heart of a mixed methods study" (Creswell & Plano Clark, 2018, p. 60). The advanced designs use the simple designs as their foundation. The choice of these core designs when conducting research largely depends on the research problem and the purpose of mixing. The complex design are beyond the scope of this chapter due to space limitations. Secondly, it is assumed that one has to master basic designs before thinking of employing complex designs.

## **Exploratory Sequential Mixed Methods Research Approach**

This design is equivalent to the *initiation, development and complementarity designs* in the typology described by Greene et al. (1989). Each of these designs are used for instrument development and identifying a sample for data collection in the subsequent phases of the study. The categories developed during the qualitative phase are used as variables in the quantitative survey instrument. The aim will be to partly generalise the qualitative results to a larger population or to gauge the prevalence of the variables for a larger population or different groups. The design may also generate and test a theory or hypothesis. Data is collected sequentially, starting with qualitative data (this phase may be used to develop data collection tools) followed by a quantitative study (collect quantitative data in a typical survey). Participants for the two phases should be different. Nested and parallel relationship samples described in the next sections are best suited for this approach.

Therefore, the exploratory approach is appropriate when the research problem is qualitatively oriented, the researcher needs to develop a product "e.g., instrument, intervention materials, or a digital tool" (Creswell & Plano Clark, 2018, p. 86) that is contextually relevant, the interest is in the "transferability and generalizability" of a newly developed product, and the researcher has time and resources to conduct the research (Creswell & Plano Clark, 2018, p. 86). The difficulties in using the explanatory approach include time needed to complete the two phases, the need to tentatively specify in advance the quantitative phase, identifying the samples, determining what qualitative results to use, and requisite skills (Creswell & Plano Clark, 2018). Theory may be developed by using the before theory development placement strategy suggested by Alavi et al. (2018). The strategy has the following three levels and corresponding tasks: (a) developing concept(s), (b) developing statement(s) and (c) developing theory.



## Example of an Exploratory Sequential Mixed Methods Research Approach

An example of a study that used exploratory sequential mixed methods research is that of Jayasundara and Ngulube (2010). In the exploratory stage, attributes and domain identification of service quality was carried out with a sample of 62 informants. Based upon the exploratory study, four provisional models were constructed and tested in the main study, using a sample of 1 840 respondents.

## Explanatory Sequential Mixed Methods Research Approach

This design is equivalent to the *development and expansion designs* in the typology described by Greene et al. (1989). It is also known as sequential triangulation (Morse, 1991) and the iteration design (Greene, 2007). Sequential and quantitative data is collected first and qualitative data is then collected to explain the quantitative findings (follow-up with interviews to help explain, for instance, any deviations from the norm (e.g., outliers), significant or non-significant results). Surprisingly, quantitative results may necessitate an explanation by using qualitative methods. The qualitative phase follows from the quantitative results. The identical and nested relationship sampling described in the next sections is recommended for the explanatory mixed methods research design.

The purpose of the explanatory approach is to use qualitative results from a qualitative phase of a study to explain initial quantitative findings from the quantitative strand of a study. The problem, which is investigated by using the explanatory approach, should be quantitatively oriented, the important variables should be known and the researcher should have resources, including time, to conduct the research in two phases. While the explanatory approach is relatively straightforward, the challenges in using it include the extended time required for completion, that the qualitative phase cannot be fully specified in advance, the need to identify the quantitative results to follow up on and specify the sample that can best provide the explanation (Creswell & Plano Clark, 2018). Theory may be tested and developed in this approach in the first and second phases respectively.

## Examples of an Explanatory Mixed Methods Research Approach

Wakeling et al. (2018) used a sequential mixed methods explanatory approach consisting of two phases. An online survey was distributed to interlending librarians and senior managers for the quantitative phase of the study and interviews with key stakeholders. The rationale of using a mixed methods research approach was not explained in both of the case studies. Wakeling et al. (2018) stated that the interview phase was aimed to generate detailed comments about the phenomenon. The question is: Why did they prefer mixed methods research to multimethods as multimethods could have generated detailed comments as well? Ngulube (2013) used a sequential explanatory mixed methods research approach to explore how researchers for LIS journals in sub-Saharan Africa (SSA) blended both qualitative and quantitative methods into their research. Content analysis was used to quantify (i.e., assigning numerical values to textual data) and to establish the patterns in the use of mixed methods. That was followed by a qualitative phase that used semi-structured telephonic interviews to collect data. The qualitative phase was initiated because the quantitative strand was not able to provide any reasons for the patterns in the research trends identified in the first phase. In other words, the statistical trends patterns in the data was explained by qualitative means. Content analysis is adaptable to a mixed methods approach and novice researchers are encouraged to use it (Creamer, 2018).

## **Convergent Mixed Methods Research Approach**

The purpose of the approach is to “obtain different but complimentary data on the same topic” (Morse, 1991, p. 122). This design superseded the triangulation mixed methods research approach. The approach was earlier on referred to as the concurrent or parallel design (Creswell & Plano Clark, 2018). Sometimes it also called concurrent triangulation design or convergent parallel design. Data is collected concurrently and it cannot be collected sequentially to avoid possibly biasing any comparisons (Onwuegbuzie & Collins, 2007). Complementary qualitative and quantitative data is collected concurrently to have a deeper understanding of the phenomenon and for the purpose of validation, that is, (convergence or corroboration and divergence). Quantitative findings can be illustrated with qualitative results (or vice versa) by using the convergent approach. The two samples used for data collection can include the same or different individuals (Creswell & Plano Clark, 2018). All the four categories of sampling (i.e., nested, parallel, identical and multilevel relationships) discussed later, apply in the selection of the samples.

Ideally the qualitative and quantitative data must be analysed independently. However, difficulties may arise when trying to analyse data completely independently of each of the data types due to overleaping research objectives and other factors (Johnson & Gray, 2010). The solution is provided by crossover-tracks analysis that entails intertwining the qualitative and quantitative components of the data (Hatta et al., 2018). Ultimately, in the end the results should be merged and compared to bring out the weaknesses and strengths of quantitative and qualitative data. Researchers should be cognisant of difficulties in dealing with sample sizes, merging text and numerical data, and explaining divergence when comparing findings (Creswell & Plano Clark, 2018). Generally, theory is tested in this mixed methods research approach.

### **Example of a Convergent Mixed Methods Research Approach**

Munyoro and Onyancha (2018) stated that they used the convergent mixed methods approach without describing the timing of data collection. The reader is left to infer from the data collection processes. When choosing mixed methods design typologies, it is important to show why, what, how and where the mixing was done. That is the case because integration is the hallmark of mixed methods research studies. A typical example in the information science environment where the convergent mixed method approach can be used to get a more complete understanding of a phenomenon, is when the researcher surveys the visually impaired users of their perceptions of the services they get from public libraries and also conducts focus group interviews on the same topic with the visually impaired users.

## **USE OF THEORY IN MIXED METHODS RESEARCH**

Theory is one of the major pillars of research. The utility of theory in any research is well recognised (Ngulube, 2018). There is a need first to distinguish a theory from a worldview or paradigm. Unlike Henning, Van Rensburg and Smit (2004), Ngulube (2018) distinguishes between paradigms and theory. Paradigms are meta-theories and they operate on a broader perspective than theories. The misconception of terms related to theory is also evident in the use of conceptual and theoretical frameworks. The use of theory in quantitative and qualitative research in LIS is well-documented (Bates, 2005; Ngulube, 2018; Sonnenwald, 2016). On the whole, qualitative studies are theory driven as they test or verify theories rather than developing them (Ngulube, Mathipa & Gumbo, 2015). On the other hand, theories are used for the

preliminary understanding of the subject of inquiry in qualitative data resulting in theory expansion and development. Theories can also develop from the data as the case in grounded theory and case studies.

The use of theory in mixed methods research in the LIS field is still a grey area. Identifying and using a theory for both the qualitative and quantitative phases of mixed methods research has remained elusive. Mixed methods researchers tend to use theories as they are employed in the qualitative and quantitative traditions to develop and test theories. An explanatory sequential mixed methods research design, which is described later, can employ a theory in the quantitative stage as background to expanding it in the qualitative phase.

Creswell (2009) suggested a transformative lens as one of the theories that mixed methods researchers may use, but the lens does not apply to all mixed methods approaches. It seems the transformative lens is a moving target because it was earlier considered as a mixed methods research transformative design by Creswell and Plano Clark (2011) and Creswell (2014), but was dropped as design by Creswell and Plano Clark (2018) and elevated to a theory. Creswell and Plano Clark (2018) acknowledge that they have changed the names and mixed method research design over the years, which may lead to confusion. That implies that the earlier books by the same authors should be read with Creswell and Plano Clark (2018).

Social science theory and the emancipation theory that encompass the transformative lens seem to be more of meta-theories than theories to explain social reality. Although Creswell and Plano Clark (2018) suggest that they are applicable to mixed methods research, they seem to operate at a broader perspective than theories. They can be used to make a theoretical stance about the situation to be transformed but they may not explain the phenomenon. Creswell and Plano Clark (2018) concede that the transformative lens may operate at a paradigm level although it can be informed by theories such as critical race theory, indigenous theories (e.g., Ubuntu and Batho Pele theories in the case of South Africa) and those theories that explain the plight of the marginalised and under-presented groups.

## **SAMPLING IN MIXED METHODS RESEARCH**

The process of sampling is important to qualitative, quantitative and mixed methods research. Probability sampling (random) is associated with quantitative research while non-probability (non-random or purposeful) sampling mostly relates to qualitative studies. Thus, non-probabilistic sampling techniques are traditionally linked to interpretivism. On the other hand, probabilistic sampling is associated with positivism. However, Onwuegbuzie and Collins (2007) pointed out that such a view is simplistic and constitute a false dichotomy as qualitative researchers may use probabilistic samples just like their quantitative counterparts. Generally, qualitative studies make “analytic” generalisations (Miles, Huberman & Saldaña, 2014) in contrast to “statistical” generalisations that are related to quantitative research.

Sampling is a process of selecting elements from a population that is representative of the whole (Onwuegbuzie & Collins, 2007). Sampling decisions are based on the sampling design, which is constituted by a sample frame, sample size and sample scheme (sampling techniques, or sampling strategy). Sampling decisions are more difficult and complicated in mixed methods research than in qualitative or quantitative studies. Onwuegbuzie and Collins (2007) were surprised that “the issue of sampling was not included as one of Teddlie and Tashakkori’s (2003) six issues of concern in mixed methods research” (p. 307). The omission was addressed as a topical concern under the methodological interface within mixed methods research (Tashakkori & Teddlie, 2010a).

Mixed methods researchers are unclear as to how to address the complex nature of sampling employed in their research. The coverage of sampling in mixed methods research in the literature is relatively limited. Although there are some chapters in books (Creswell, 2015; Kemper, Stringfield & Teddlie, 2003; Onwuegbuzie & Teddlie, 2003) on the subject of sampling in mixed methods research, the articles of Collins, Onwuegbuzie and Jiao (2007), Onwuegbuzie and Collins (2007) and Teddlie and Yu (2007) remain instructive. Teddlie and Yu (2007) categorically stated that mixed methods research has unique sampling techniques.

On the other hand, Onwuegbuzie and Collins (2007) outlined the following seven linear steps in the mixed methods research sampling process:

- Determine the goal of the study.
- Formulate the research objective(s).
- Determine the research purpose.
- Determine the research question(s).
- Select the research design.
- Select the sampling design.
- Select the sampling scheme.

Mixed methods researchers should select samples for the quantitative and qualitative components of a study. Sampling in mixed methods research is mainly determined by the objective of the study. Johnson and Christensen (2004) identified four research objectives: exploration, description, prediction and influence. The objective is linked to the research goal, purpose and the research question. Mixed methods researchers may select from the available nonprobability and probability sampling techniques. Kemper et al. (2003) emphasised that researchers should be familiar with a wide range of sampling techniques to increase, “the likelihood of one’s generating findings that are both rich in content and inclusive in scope” (p. 292).

The sample size needs to be determined after the sample scheme has been selected. Typically, the sample size is determined by the complexity of the phenomenon under study, the characteristics of the sample frame, available resource and type of the research approach being used (Creswell, 2016a). Samples between 3 and 50 are common in qualitative studies (Creswell, 2016a; Onwuegbuzie & Collins, 2007). The samples should be adequate to facilitate theoretical saturation (Strauss & Corbin, 1990), data saturation (Flick, 1998), or information redundancy (Lincoln & Guba, 1985). Saturation is reached when participants start to repeat the same information over and over again. Quantitative research use representative sample sizes based on the sampling statistical theory and tables for determining sample sizes of known populations (Ngulube, 2005).

Time orientation (i.e., sequential versus concurrent) and the relationship between quantitative and qualitative samples is important in determining sample size. Onwuegbuzie and Collins (2007, p. 292) conceptualised the following four relationships of samples that can use a sequential or concurrent time orientation:

- **Identical relationship:** the same sample members participate in both the qualitative and quantitative strand of the research; for example, administering a survey of the availability and utilisation of information and communication technologies (ICTs) in public libraries to visually impaired users (VIPs) in the Gauteng Province of South Africa that comprises closed- and open-ended question

items necessitating the simultaneous conduct of qualitative and quantitative phases of the study. The explanatory mixed methods approach uses this sampling technique as the individuals who contributed data in the quantitative phase are best suited to give more details about the results in the qualitative phase.

- Parallel relationship: the samples for the qualitative and quantitative phase of the research are different but are drawn from the same target population (e.g., a survey of the availability and utilisation of ICTs in public libraries to VIPs for the quantitative component and conducting in-depth interviews and observations examining the availability and utilisation of ICTs on a small sample of VIPs from other libraries for the qualitative phase). The convergent or parallel mixed method approach and the explanatory one may employ this sampling technique.
- Nested relationship: the sample members selected for “one phase of the study represent a subset of those participants chosen” for the other component of the study (e.g., administering a quantitative instrument on the availability and utilisation of ICTs in public libraries to VIPs for the quantitative component and conducting in-depth interviews and observations examining the availability and utilisation of ICTs in public libraries on those who rarely used and those who frequently used the libraries). The convergent or parallel mixed method approach may employ this sampling technique.
- Multilevel relationship: two or more sets of samples are drawn from different populations in the study. For example, the quantitative component might involve the sampling of VIPs within a library and the qualitative phase might involve the sampling of the librarians, and/or directors. Another example of a multilevel relationship is found in the study conducted by Munyoro and Onyancha (2018) in Zimbabwe. The study used members of parliament, the political leaders in constituencies and representatives of constituents in parliament and constituents who resided in a legislative constituency and the intended beneficiaries of parliamentary information for the quantitative component of the study. They constituted the probability sample although the authors did not describe their sample size and its rationale. On the other hand, officers of parliament, the Clerk of Parliament and his deputy, and the Parliamentary Program Coordinator at parliament participated in the qualitative strand. The sample for the qualitative component was purposively determined as was the selection of the geographic provinces that formed part of the study.

The two variables, time orientation and sample relationship can be used to determine the sample design and sample sizes for mixed methods research studies. The type and level of generalisation (i.e., statistical or analytical) required will determine the optimal sample size for the qualitative and quantitative phases of the study. The sample for the quantitative phase should be sufficient to yield adequate statistical power. On the other hand, the qualitative sample should yield enough data to facilitate a thick, rich description of the phenomenon (Creswell, 2016a; Miles, Huberman & Saldaña, 2014). Mixed methods researchers should evaluate their sampling designs for ethical appropriateness. Furthermore, they should make transparent samples decisions and, as declared by Curtis et al. (2000):

*It seems essential to be explicit about these [decisions], rather than leaving them hidden, and to consider the implications of the choice for the way that the...study can be interpreted (p. 1012).*

## CONDUCTING MIXED ANALYSES

Onwuegbuzie and Teddlie (2003), Creswell and Plano Clark (2018) opine that:

*Mixed methods data analysis consists of analytical techniques applied to both the quantitative and the qualitative data as well as the integration of the two forms of data (p. 218).*

Methodological principles or frameworks for data analysis that distinguishes mixed methods research from traditional quantitative and qualitative methodologies is one of the topical issues in the development of this methodology (Tashakkori & Teddlie, 2010b). The field is not yet mature in relation to analysis. Indeed, analysing data is one of the most difficult tasks when conducting the mixed methods research process (Onwuegbuzie & Combs, 2010, p. 398). The difficulty becomes evident when one analyst has to rigorously analyse both qualitative and quantitative data. It is not unusual to have an analyst who is not competent in analysing both quantitative and qualitative data. The other challenge is in integrating qualitative and quantitative data to make coherent and meaningful meta-inferences or what Teddlie and Tashakkori (2009) describes as “inference quality” (p. 27). Inference quality depends on the extent to which the selected analysis procedures are aligned to the research questions, yield an adequate representation of data, fit together in an integrated and coherent manner, and appropriately and adequately answer the research question (Onwuegbuzie & Combs, 2010; Teddlie & Tashakkori, 2009).

A number of analysis strategies for mixed methods research data analysis have been suggested (Datta, 2001; Hitchcock & Onwuegbuzie, 2019; Onwuegbuzie & Combs, 2010; Onwuegbuzie & Hitchcock, 2015; Teddlie and Tashakkori, 2009). Although analytical frameworks exist they support limited integration (Tashakkori & Teddlie, 2010b). Caracelli and Greene (1993) describe four data analysis strategies for mixed methods that are not linked to any research paradigm: (1) data transformation; (2) typology development; (3) extreme case analysis; and (4) data consolidation and merging. Onwuegbuzie and Teddlie (2003) outline seven steps in mixed methods data analysis: (a) data reduction, (b) data display, (c) data transformation, (d) data correlation, (e) data consolidation, (f) data comparison, and (g) data integration. These typologies are not discussed in this chapter due to word-count limitations. Although there is no “single set of prescribed procedures for mixing methods” as suggested by Creamer (2018), the important thing to bear in mind is that the data analysis strategy must facilitate integration, “the centrepiece of mixed methods research” (Creswell & Plano Clark, 2018, p. 220). There must be a clear intent for integration, data integration procedures, representation of the integration results and interpretation of the integration results (Creswell & Plano Clark, 2018).

The strategies for analysis use quantitative research tools such as descriptive, exploratory, confirmatory, and inferential analyses. Domain analysis, theme analysis, taxonomic analysis, componential analysis and constant comparison analysis are employed in analysing data in various qualitative research approaches (Hitchcock & Onwuegbuzie, 2019). A combination of these data analyses schemes are used in mixed methods research to yield concurrent mixed analyses, sequential mixed analyses, multilevel mixed analyses, fully integrated mixed analyses and crossover mixed analyses.

Following Datta (2001), Teddlie and Tashakkori (2009) identified two types of mixed methods research analyses: parallel-tracks analysis, and crossover-tracks analysis. In parallel-tracks analysis, “the analyses are conducted independently, according to the strands of quality and excellence for each method... and the findings are brought together after each strand has been taken to the point of reaching conclusions” (Teddlie & Tashakkori, 2009, pp. 268-269). On the other hand, “findings from the various

methodological strands intertwine and inform each other throughout the study’’ in a crossover-tracks analysis (Teddlie & Tashakkori, 2009, p. 269). Hitchcock and Onwuegbuzie (2019) describe crossover analysis as the practice of using data analysis techniques employed in quantitative research to analyse data from qualitative research and vice versa. The research question determines the extent of crossover analysis. Ultimately, multiple data analysis techniques are employed. This chapter advocates the parallel-tracks analysis, and crossover-tracks analysis.

## **QUALITY OF MIXED METHODS RESEARCH DATA**

Strategies for establishing rigour in quantitative and qualitative studies are well-established. However, limited guidance exists for assessing the quality of MMR (Brown et al., 2015; Carayon et al., 2015). Rigour and the criteria of evaluating quality is a contested terrain in mixed methods research (Onwuegbuzie & Johnson, 2006; Tashakkori & Teddlie, 2010b). Tashakkori and Teddlie (2010c, p. 813) described the mixed methods research quality terrain as “chaotic” due to various reasons. Brown et al. (2015) found that the reporting of methodological rigour was inadequate in many mixed methods studies. Creswell and Plano Clark (2018) stated that while mixed methods research should meet both qualitative and quantitative criteria, it must go beyond that criteria. O’Cathain (2010) suggested that mixed methods research should be evaluated for transparency and clarity in reporting planning, design, data, interpretive rigor, inference transferability, reporting quality, synthesisability, and utility.

Although many quality evaluation frameworks for mixed methods exist, Creswell and Plano Clark (2018) stated that mixed methods research studies should be evaluated on the basis of how qualitative and quantitative data were collected, how both forms of data were intentionally combined, how the study is informed by a specific research design or approach and how it is framed by theory and foundational assumptions. Similarly, Creamer (2018) suggested a rubric for evaluating the quality of mixed methods studies: (a) transparency about the rationale for using mixed methods research, (b) the amount of mixing across the “four phase of the research process (i.e., design, data collection and sampling, analysis, and inferential phases)” (p. 150), (c) engagement with both the positivist and interpretivist perspective with a concern for “interpretive comprehensiveness”, and (d) methodological underpinning or familiarity with the methodological literature.

## **PROMOTION OF MIXED METHODS RESEARCH BY LIS PROFESSIONALS**

Library and information science research in the developing world is complex and intricate. The research also has to deal with wicked and social problems such as unequal access to information resources, digital divide, exclusion of the literature on indigenous people and other marginalised groups such as the physically challenged, lesbian, gay, bisexual, and transgender (LGBT) people in the LIS landscape, and unequal development. These problems require new tools for examining research problems and acquiring knowledge in addition to the dominant quantitative and qualitative methodologies. Mixed methods research also referred to as the third methodological movement (Tashakkori & Teddlie, 2003, 2010a) and third research paradigm (Johnson & Onwuegbuzie, 2004) has the potential combining qualitative and quantitative dichotomies to obtain better inferences and to comprehensively explore, describe, predict and transform the information science research environment.

There is a need for LIS researchers and professionals to develop a competency in mixed methods research and become methodological connoisseurs. LIS professionals should promote dialogue across methodological and theoretical divides to create a knowledge and professional base that builds on similar and different strengths of the LIS profession while acknowledging the core characteristics and structure of mixed methods research. Specifically, they should harness mixed methods research in LIS research. LIS professionals should also provide guidelines for the adoption and use of mixed methods research, and motivate for funding for mixed methods research studies as envisioned in the five domains constituting the map of mixed methods research suggested by Creswell (2010).

Furthermore, there is a need to get beyond the dichotomous model, (i.e., quantitative versus qualitative), when conducting research by harnessing mixed methods research towards understanding social complexity and building “a practice of social and historical explanation, sensitive to structure but aware of contingency...by reconstructing the available tools of social science and social theory” (Unger, 1998, p. 24). The absence of such a practice partly denies LIS researchers “a credible account of how transformation happens” (Unger, 1998, p. 24). Embracing the “new star in the social science sky” (Mayring, 2007, p. 1) and espousing “multiple ways of seeing and hearing” (Greene, 2007, p. 20) has the potential of providing LIS professionals tools for reconstructing social theory and transforming their practice in recognition of the various changes affecting the provision of information to society. A field is “strengthened when its researchers show an awareness of the weaknesses and strengths of qualitative and quantitative approaches” (Rocco, Bliss, Gallagher & Pérez-Prado, 2003, p. 23).

## **FUTURE RESEARCH DIRECTIONS**

Several questions remain unanswered at present. The affordances provided by digital technologies to mixed methods researchers is not fully known. Future studies on that topic are recommended. The mixed methods research typologies used in this chapter are mainly drawn from Creswell and Plano Clark (2018). The two authors admit that they have changed and adjusted the typologies since 2003, although they are now closer to the ones formulated in 2003. There is a need to continue to identify and compare the mixed methods research typologies in the literature in order to settle for the most elegant ones.

## **CONCLUSION**

Mixed methods developed from multimethods to become a third research methodology that combines qualitative and quantitative approaches in one of the phases to investigate a research problem. The approaches should only be combined when there is a purpose and the specific mixed method approach or design must be specified. This chapter has traced the evolution of mixed methods research, situated the methodology in the research methods landscape, problematised the meaning of mixed methods research, and discussed the use of theory in mixed methods research, the data sampling techniques and data evaluation criteria in mixed methods research.



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## **KEY TERMS AND DEFINITIONS**

**Methodology:** Strategies encompassing qualitative, quantitative and mixed methods research methodologies concerned with producing and explaining empirical knowledge.

**Mixed Methods Research:** Integration of qualitative and quantitative research approaches in many or all phases of a single study to comprehensively address a research problem by collecting quantitative and qualitative data concurrently or in phases with the aim to maximising their inherent advantages while minimising their disadvantages.

**Multimethods Studies:** Multimethods studies are equivalent to triangulation. These were the forerunners on mixed methods research.


**Triangulation:** The use of more than one data collection method, or theory, or approach (e.g., grounded theory and case study) in one research project.

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# Chapter 16

## Integration in Mixed Methods Research Designs by Graduate Students at the University of Science and Technology

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### ABSTRACT

*This chapter reports on a study that investigated how graduate students in the Faculty of Communication and Information Science at NUST were approaching integration in their mixed-methods research dissertations. There has been a concern that lack of expertise of what mixed-methods research is restricts the integrative capacity. Using a research synthesis method, the study investigated three graduate programmes, namely Master's degrees in Library and Information Science, Records and Archives Management, and Journalism and Media Studies from 2016 up to 2018. A total of 95 dissertations were reviewed, and 40 employed mixed-methods research design. It was discovered that integration was commonly done at methods and interpretation levels. Integration of qualitative and quantitative data sets resulted in confirmation (83), expanding understanding (27), and discordance (31). Graduate students dealt with discordant findings by either ignoring the discordance (20), seek corroboration with existing literature (7), or give priority to the quantitative strand (4).*

### INTRODUCTION

There is an established body of knowledge about mixed methods research (MMR); discussing why this approach is used, how it can be used, and the challenges of using it in theory and in practice (O'Cathain, Murphy, & Nicholl, 2007). However, Fetters and Freshwater (2015) contend that a crucial aspect of MMR is the integration issue. Befittingly, the field of mixed methods has been moving towards the challenge of integration. Integration is where investigators intentionally combine or mix the quantitative and qualita-

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tive elements rather than keeping them separate in order to bring new understanding of a phenomenon than either method alone can achieve. Fetters, Curry and Creswell (2013) cautioned that although there are many potential gains from data integration, the extent to which MMR studies implement integration remains limited. In health services for example, Tonkin-Crine et al. (2016) observed that mixed methods are commonly used however; data are not often integrated to explore complementarity of findings. Creswell (2009) opined that mixed methods researchers need to establish a purpose for their mixing, a rationale for mixing the quantitative and qualitative data in the first place.

The way graduate students in the Faculty of Faculty of Communication and Information Science (CIS) at NUST have been exploiting MMR has not been adequately studied. It is not known whether graduate students in the Faculty of CIS are harnessing the value integration in their MMR. Thus, it is appropriate and timely to reflect how students are approaching the MMR focusing on the integrating aspect. There is a sense in which the lack of expertise and/or understanding of what mixed methods is, which restricts the integrative capacity of students to appropriately use the method. Creswell and Plano Clark (2011) are of the view that prior to designing a mixed methods study, the researcher should develop a deep understanding of the method to recognise its essential characteristics and adequately justify its use.

Scholars point that researchers and students alike tend to conflate and confuse mixed methods design and triangulation of methods in a study (Ngulube & Ngulube, 2015; Denzin, 2012; Creswell, 2009; Greene, Caracelli, & Graham, 1989). This led to Sale, Lohfeld and Brazil (2002) to conclude that MMR is now being adopted uncritically by a new generation of researchers. Many researchers take qualitative and quantitative strands and call it MMR and rightly, Denzin (2012) cautions researchers not to confuse triangulation with MMR. In its original form Denzin (2012, p. 82) argues “triangulation referred only to the use of multiple forms of qualitative research methods, not the combination of quantitative and qualitative methods.” Denzin further notes that triangulation reflects an attempt to secure an in-depth understanding of the phenomenon in question. MMR is “more than simply collecting both quantitative and qualitative data; it indicates that data will be integrated, related, or mixed at some stage of the research process” (Creswell, Fetters, & Ivankova, 2004, p. 1). This integration occurs at various stage(s) of the research process (Glogowska, 2011). To this end, experts intimated an underdevelopment and/or limitation in the way mixed method has been employed or applied by researchers. Creswell et al. (2004) note that the stage of the research process at which the data are combined illustrates the complexity of MMR and the need to be explicit about the model of inquiry being used. As a result, it was felt that graduate students in the Faculty of CIS were probably not maximizing the degree to which they are using this design “given the added resources, time, and expertise required to conduct a mixed methods study” (McKim, 2017, p. 202).

It is, therefore, the thrust of this chapter to review the application of MMR design by graduate students in the Faculty of CIS with a particular focus on integration. This is done as part in profiling the research practices in the Faculty of CIS and provides the Faculty with trends and patterns of research approaches being exploited by its graduate students. Alise and Teddlie (2010) make the point that “examining the prevalence rate of methodological approaches within the social sciences is a new line of research” (p. 103). Further, the study attempts to contribute to the knowledge of MMR as the field is dealing with the challenge of integration. Understanding how students were approaching integration in MMR in the Faculty can help supervisors, researchers and graduate students leverage the strengths of MMR and avoid the pitfalls, misconception and common fallacies associated with the method. The focus on graduate students is justified by the fact that this group of students has mastered research and can produce research with the potential of contributing to knowledge and development.

## **MIXED METHODS RESEARCH DEFINED**

The phrase mixed methods research is known by various nomenclatures that include integrated method; combined methods; mixed methodologies; quantitative and qualitative methods (Guetterman, 2017). In this chapter, the term “mixed methods research” was preferred. Definitions of mixed methods research abound in literature (Wisdom & Creswell, 2013; Creswell & Clark, 2007; Tashakkori & Creswell, 2007; Johnson, Onwuegbuzie, & Turner, 2007; Tashakkori & Teddlie, 1998; Greene et al., 1989). Of note is that of Wisdom and Creswell (2013) who referred to MMR as an emergent methodology of research that advances the systematic integration, or “mixing,” of quantitative and qualitative data within a single investigation or sustained program of inquiry. Creswell and Clark (2007) defined MMR as “a research design with philosophical assumptions as well as methods of inquiry; as a methodology it involves philosophical assumptions that guide the direction of the collection and analysis and the mixture of quantitative and qualitative approaches in many phases of the research process and as a method it focuses on collection, analysing and mixing both quantitative and qualitative data in a single study or series of studies” (p. 5). The MMR is also defined as “research in which the investigator collects and analyses data, integrates the findings and draws inferences using both qualitative and quantitative approaches and methods in a single study” (Tashakkori & Creswell 2007, p. 4). From the three definitions it can be gleaned that MMR contains essentials of methods, philosophy and research design. Thus, investigators deliberately integrate the quantitative and qualitative elements rather than keeping them separate throughout the research process.

The overall purpose and central premise of MMR is that the combination of both qualitative and quantitative methods proves to be a better way of understanding a research problem than either approach by itself (Creswell & Plano Clark, 2011). Additionally, the use of both qualitative and quantitative strands in a single study is generally understood to offset the weakness of a single method by the strengths of another method (Creswell & Plano Clark, 2011). Hurmerinta-Peltomaki and Nummela (2006) elucidated that studies that use a mixed methods approach to gain a deeper, broader understanding of the phenomenon than studies that do not utilise both a quantitative and qualitative approach. For the reasons above, it becomes attractive for graduate students to settle for MMR design in their studies.

## **INTEGRATION IN MIXED METHODS - A CONCEPTUAL FRAMEWORK**

A MMR design as a product of both qualitative and quantitative aspects has several primary characteristics that should be considered during the design process (Schoonenboom & Johnson, 2017). As gleaned from Guetterman (2017), Saunders, Lewis and Thornhill (2016), Fetters et al. (2013), Bryman and Bell (2011), Mertens (2009), Creswell and Clark (2011), Creswell and Clark (2007), Teddlie and Tashakkori (2006) and Creswell (1999), integration in MMR occurs at **conceptualisation** level through the title, research questions, purpose etc.; **philosophical** level through ontological, epistemological, axiological and methodological assumptions; **study design** level through three basic MMR designs namely exploratory sequential, explanatory sequential, and convergent. Integration at the **methods level** occurs through connecting, building, merging, embedding. Integration at the **interpretation and reporting level** occurs through narrative, data transformation, and joint display. It can be observed from the above that integration in MMR occurs throughout the process of research. Table 1 summarises a conceptual framework of how integration occurs at the various stages throughout the research process.

*Table 1. Integration levels (Researcher, 2018)*

Integration level	Approaches	Description
Conceptualisation	<ul style="list-style-type: none"> <li>● Title</li> <li>● Statement of the problem</li> <li>● Research questions</li> <li>● Feasibility</li> </ul>	<p><b>Title:</b> Wording alludes to mixed methods design- includes words mixed methods in title</p> <p><b>Problem:</b> suitability for mixed methods design</p> <p><b>Research questions:</b> must allude to mixed methods</p> <p><b>Feasibility-</b> in terms of time, resources and skills</p>
Philosophy of science	<ul style="list-style-type: none"> <li>● Pragmatism</li> <li>● Critical realism</li> <li>● Transformative</li> </ul>	<p><b>Four sets of assumptions</b></p> <ul style="list-style-type: none"> <li>● Ontology- nature of reality</li> <li>● Epistemology- nature of knowledge</li> <li>● Axiology- values</li> <li>● Methodology- how one attempts to investigate</li> </ul>
Design	<p><b>3 core designs</b></p> <ul style="list-style-type: none"> <li>● Exploratory sequential</li> <li>● Explanatory sequential</li> <li>● Convergent</li> </ul>	<ul style="list-style-type: none"> <li>● <b>Exploratory sequential:</b> Two-phase. Qualitative(Qual) ► quantitative (Quan)</li> <li>● <b>Explanatory sequential:</b> Two-phase. Quan ► Qual</li> <li>● <b>Convergent:</b> This involves collecting both quantitative and qualitative data in similar timeframe. Qual ↔ Compare or relate Quan</li> </ul>
Methods	<ul style="list-style-type: none"> <li>● Quan-Qual: <b>Connecting</b></li> <li>● Qual-Quan: <b>Building</b></li> <li>● Both Qual and Quan at the same time: <b>Merging</b></li> <li>● <b>Embedding:</b> involve any combination of connecting, building, or merging</li> </ul>	<p><b>Connecting:</b> one database links to the other through sampling.</p> <p><b>Building:</b> one database informs the data collection approach of the other.</p> <p><b>Merging:</b> the two databases are brought together for analysis.</p> <p><b>Embedding:</b> data collection and analysis link at multiple points.</p>
Interpretation and reporting	<ul style="list-style-type: none"> <li>● <b>Narratives</b></li> <li>● <b>Data transformation</b></li> <li>● <b>Joint displays</b></li> </ul>	<p><b>Narratives:</b> There are three approaches – weaving, contiguous and staged</p> <p><b>Data transformation-</b> transforming one form of data onto another form.</p> <p><b>Joint displays:</b> integrate the data by bringing the data together through a visual means to draw out new insights</p>

## Research Question

The research question that informed the study was: Are graduate research studies employing MMR exploiting the full potential of the method as the field of mixed methods is moving towards the challenge of integration?

This broad question was addressed by five sub-questions stated below:

1. How prevalent is mixed methods research in the Faculty of CIS?
2. How is mixed methods research presented at a conceptual level by graduate studies?
3. How is the integration of qualitative and quantitative elements done at philosophical and design levels by graduate students?
4. What is the purpose(s) for integrating qualitative and quantitative methods by graduate students?
5. How is interpretation and reporting of results done by graduate students employing mixed methods research?

## **A REVIEW OF MIXED METHODS LITERATURE**

Mixed methods research originated in the social sciences (Wisdom & Creswell, 2013). Mayring (2007) heralded it as “the new star in the social sciences sky” (p. 1). However, Ngulube, Mokwatlo and Ndwandwe (2009) find it very difficult to see the reason many scholars think that MMR is new if one closely looks at the typology of combining paradigms. They claim that all along, researchers have been combining research approaches, but the emphasis was not on using both qualitative and quantitative paradigms across all the stages of the research process.

### **Integration and the Mixed Methods Debate**

Although it is ironclad that a mixed methods approach has much to offer to a researcher, there has been a raging debate about its use. According to Sale et al. (2002), the key issues in the quantitative-qualitative debate are ontological and epistemological. Creswell and Clark (2007) point to an incompatibility thesis that quantitative and qualitative research methods cannot be mixed in a single study as they have such different ontological and epistemological origins. Based on their paradigmatic assumptions, the two methods do not study the same phenomena (Sale et al., 2002). Methodological purists believe strongly in the dichotomy of worldviews and research methods (Creswell & Plano Clark, 2007) and therefore argue against the integration of quantitative and qualitative approaches. Guba (1987) clearly identified the extent of the dichotomy between the paradigms by stating how “the one precludes the other just as surely belief in a round world precludes belief in a flat one” (p. 31).

Reichardt and Cook (1979) disputed the incompatibility thesis based on the paradigm-method fit by suggesting that different philosophical paradigms and methods are compatible. This is supported by Mir and Watson (2000) who claimed that a researcher who is anchored in constructivist methodology may employ a variety of methods including statistical analysis, just as a researcher employing a realist methodology may use qualitative research. Further, the two paradigms are thought to be compatible because they share the tenets of theory-ladenness of facts, the fallibility of knowledge, the determination of theory by fact, and a value-laden inquiry process (Sale et al., 2002). They are united by a shared commitment to understanding and improving the human condition, a common goal of disseminating knowledge for practical use, and a shared commitment for rigor, conscientiousness, and critique in the research process (Reichardt & Rallis, 1994). In the end, Sale et al. (2002), caution against the uncritical acceptance of MMR by a new generation of researchers who have overlooked the underlying assumptions and differences between the two paradigms.

### **Previous Studies on Integration and Graduate Students**

Reviewed studies on integration addressed three critical areas regarding the nature of integration (Ngulube, 2013); triangulation as a protocol to achieve integration (Tonkin-Crine et al., 2016); and the challenges experienced by researchers in integrating qualitative and quantitative data sets (Bryman, 2007). In the field of library and information science (LIS), Ngulube (2013) looked at how researchers for LIS journals in sub-Saharan Africa (SSA) blended both qualitative and quantitative methods into their articles between the period 2002 and 2010. Using content analysis and semi-structured telephonic interviews the study found that the dominant research methods were survey and historical research. The study further found that 50 out of 793 articles integrated research methods and a few articles used the terms integrated,

or mixed, or blended, or combined methods in the abstract. It further records that authors chose to use MMR because it was trendy rather than for its ability to answer certain kinds of research questions. The study established that authors used MMR according to the triangulation purpose. The study notes that the three rationales for mixing approaches suggested by Collins, Onwuegbuzie and Sutton (2006), which include participant enrichment (for example, increasing the number of participants); instrument validity and reliability (for instance, pretesting and piloting the study); and treatment integrity (that is, assessing the reliability of interventions and programmes) were not evident in the articles that were analysed.

A study by Tonkin-Crine et al. (2016) using a retrospective triangulation protocol was carried out on mixed methods data collected as part of a process evaluation of a trial. Using three analysts, the study independently compared findings across four data sets: qualitative data collected via semi-structured interviews with (1) 62 patients and (2) 66 general practitioners (GPs) and quantitative data collected via questionnaires with (3) 2886 patients and (4) 346 GPs. Pairwise comparisons were made between data sets and were categorised as agreement, partial agreement, dissonance or silence. Three instances of dissonance occurred in 39 independent findings. The study concluded that a triangulation protocol to integrate qualitative and quantitative data can reveal findings that need further interpretation and also highlight areas of dissonance that lead to a deeper insight than separate analyses.

Bryman (2007) examined findings from 20 interviews with United Kingdom (UK) social researchers, all of whom were practitioners of MMR with view to identify barriers to integration. From these interviews, a wide variety of possible barriers to integrating mixed methods findings were discovered and these are summarised and listed below:

1. Perceptions of the expectations of audiences may cause mixed methods researchers either to write up one set of findings to the exclusion of the other.
2. Lingering affiliations to either a quantitative or qualitative research approach can inhibit the mixed methods researcher's inclination to combine.
3. A mixed methods project is set up in such a way that either the quantitative or the qualitative component provides the main point of orientation; it will be difficult to bring the findings together.
4. The quantitative and the qualitative components of a mixed methods study may get out of phase with each other, because of their different needs and rhythms.
5. Many researchers have specialised in their training in either a predominantly quantitative or qualitative tradition.
6. Researchers may feel that one set of data turns out to be more intrinsically interesting or striking than the other set.
7. Bridging ontological divides.

Bryman (2007, p. 21) concluded by advising that "if mixed methods researchers return to their grounds for conducting such research in the first place, they may be able to use their arguments as a platform for conducting an analysis that is integrative."

Studies that address the use of MMR by graduate students are limited. One notable study is that by O'Cathain et al. (2007) looked at how MMR is used. Other studies looked at the perceived value of MMR by graduate students (McKim, 2017; Creswell & Plano Clark, 2007; Tashakkori & Teddlie, 2003). O'Cathain et al. (2007) looked at how MMR is used in health services research. Using a documentary analysis method on proposals and reports of 75 MMR studies, the study found out that only 18% of the studies were noted as mixed methods. In the documentation, comprehensiveness was the main driver for

using MMR, with researchers wanting to address a wider range of questions than quantitative methods alone would allow. The researchers stated that the use of MMR design is driven by the apparent short-fall of quantitative methods. The researchers noted that the motivations for adopting a MMR approach were not always based on the intrinsic value of MMR for addressing the research question but strategic, for example, to obtain funding. The study concluded that MMR was driven by pragmatism rather than principle, motivated by the perceived deficit of quantitative methods alone to address the complexity of research in health care, as well as other more strategic gains.

## **METHODOLOGY**

The study employed the research synthesis method with document analysis as the primary method. According to Sheble (2014, p. 5), research synthesis is a document-based empirical research method in which primary research reports are analysed with the goal of generating new knowledge or interpretations. Sheble (2014, p. 6) further notes that research synthesis involves formulating a research problem, retrieving relevant literature, evaluating, analysing, and synthesizing data, interpreting results, and reporting and disseminating findings. Ngulube and Ukwoma (2019) used the same research method to analyse the methodological trends in dissertations from South Africa and Nigeria. Document analysis of mixed methods studies of graduate students in the Faculty of CIS was undertaken to explore how mixed methods studies were undertaken. The qualitative analysis of MMR facilitated the extraction of data using a form which included the elements provided in Creswell (1999)'s guidelines of how to conduct MMR. The worksheet recorded the nature of the titles, nature of the problems, nature of the research questions, the MMR designs, weighting of the qualitative and quantitative strands, reasons for using mixed methods, methods of interpretation and reporting, presentation of a visual model. Descriptive statistics were useful for the quantitative analysis regarding the mixed methods dissertations, numbers and percentages by type of priority (equal or dominant status), type of implementation (simultaneous or sequential) and purpose.

The assessment of fit of integration for the MMR dissertations was done by examining how the qualitative and quantitative data sets were reported and interpreted by graduate students. To achieve this, reported findings for each of the research questions posed by graduate students in the MMR dissertations were analysed for the purpose of discovering the outcome of data integration. The connexion between data sets was labelled as one of four categories: confirmation, expansion, dissonance and not applicable. Confirmation occurs when the findings from both types of data confirm the results of the other (Fetters et al., 2013). Expansion occurs when the findings from the two sources of data diverge and expand insights of the phenomenon of interest by addressing different aspects of a single phenomenon or by describing complementary aspects of a central phenomenon of interest (Fetters et al., 2013). Discordance occurs if the qualitative and quantitative findings are inconsistent, incongruous, contradict, conflict, or disagree with each other. When a research question had single data set it was labelled not applicable because no convergence of data was possible. Statements that indicated the outcomes of data integration were recorded and quantified.



## Search Strategy

According to Molina-Azorin and Cameron (2010), an important aspect related to the identification and prevalence of mixed methods articles is the search strategy used. To identify mixed methods dissertations and determine their main characteristics, a manual search of the graduate dissertations stored by the concerned academic departments was conducted. Ordinarily, a library would be the best place to get the thesis, however given the number of dissertations that were involved and the fact that these were not allowed to leave the NUST Library, the researcher had to work with dissertations requested from the respective academic departments. The titles and abstracts of all the dissertations from 2016 - 2018 were read and reviewed for the purpose of determining whether each dissertation represented a quantitative, qualitative or mixed methods study. After the dissertations were grouped, MMR dissertations were examined.

There were three departments offering Master of Science programmes in the Faculty of CIS at NUST at the time of the study namely Journalism and Media Studies (JMS), Library and Information Science (LIS), and Records and Archives Management (RAM). Students' registers were used to establish the sampling frame. Table 2 shows the total number of dissertations that were produced in the Faculty from 2016 up to 2018, organised according to departments.

*Table 2. Sampling frame*

Department	Number of dissertations studies from 2016-2018
JMS	32
LIS	51
RAM	12

## RESULTS AND DISCUSSION

### Overview

Ninety-five graduate research studies from 2016 to 2018 were availed by the three departments in question. A document review of these studies which involved reading all the titles and abstracts of the studies for the purpose of identifying the research design indicated that forty studies claimed to have used MMR constituting 42.1% of the total. Fifty-one were qualitative studies constituting 53.6% of the total studies. Four studies were quantitative constituting 4.2% of the total studies.

When the dissertations were organised according to departments, the study established that in 2016, LIS had a greater number of mixed methods studies accounting for twelve and Journalism had four. In 2016, RAM had just launched their MSc programme and no dissertations had been completed.

In 2017, only graduates in LIS employed the mixed methods design (12). JMS had a greater number of graduates who employed qualitative design twelve (12) and LIS had five (5).

In 2018, LIS had a greater number nine (9) of graduates employing the MMR albeit fewer than the past two years. RAM had three (3) studies that employed the mixed methods approach whilst JMS had none.

**Integration in Mixed Methods Research Designs by Graduate Students at the University**

*Table 3. 2016 graduate research dissertations*

Department	Mixed methods Dissertations	Qualitative	Quantitative	Total
JMS	4	4	-	8
LIS	12	4	-	16
RAM	-	-	-	0
<b>Total</b>	<b>16</b>	<b>8</b>	<b>-</b>	<b>24</b>

*Table 4. 2017 graduate research dissertations*

Department	Mixed methods Dissertations	Qualitative	Quantitative	Total
JMS	-	12	-	12
LIS	12	5	2	19
RAM	-	-	-	0
<b>Total</b>	<b>12</b>	<b>17</b>	<b>2</b>	<b>31</b>

*Table 5. 2018 graduate research dissertations*

Department	Mixed methods Dissertations	Qualitative	Quantitative	Total
JMS	-	12	-	12
LIS	9	6	1	16
RAM	3	8	1	12
<b>Total</b>	<b>12</b>	<b>26</b>	<b>2</b>	<b>40</b>

Taken together, it was computed that most graduate students 53, 6% (N=51) in the Faculty of CIS at the NUST used qualitative research design. Qualitative research was popular in JMS, having produced 28 dissertations out of the 51 qualitative studies in the Faculty. Mixed methods accounted for 42.2% (N=40) of the dissertations whilst quantitative accounted for 4.2% (N=4).

A scrutiny of the results revealed that a larger proportion of the studies that attempted to use MMR 81.8% (N= 33) came from LIS. JMS and RAM held a negligible 10% (N=4) and 8, 2% (N=3) of the dissertations respectively. Of the 51 LIS dissertation, more than half (N=33) of the LIS graduate students (N=51) attempted to use the MMR in their dissertations since 2016. The prevalence of mixed methods in LIS could be attributed to the fact that LIS is a multidisciplinary and interdisciplinary field. It also follows that “the research is multidisciplinary in nature, and it has been heavily influenced by research designs developed in the social, behavioural, and management sciences and to a lesser extent by the theoretical inquiry adopted in the humanities” (Eldredge, 2000). Hjørland (1998) opined that LIS has evolved in close relationship with other fields of research, especially computer science, communication studies, and cognitive sciences.

The connection of LIS with professional practice, on one hand, and other research fields on the other has influenced its research orientation and the development of methodological tools and theoretical perspectives (Åström, 2007). For example, Togia and Malliari (2017) noted that methods used in information retrieval research have been adapted from computer science. In JMS, the four (4) recorded MMR studies

were conducted in 2016 and since then no MMR was conducted. All the studies in 2017 and 2018 were qualitative in nature. Creswell and Plano Clark (2011) revealed that MMR requires additional time due to the need to collect and analyse two different types of data. For a nascent programme, three MMR out of the twelve studies conducted in RAM demonstrated that the Department was inclined towards qualitative research with eight dissertations recorded. Only a single study was recorded as quantitative in RAM.

## **Conceptualisation Level**

Conceptualisation includes the formation of research purposes and questions. Mixed methods titles, research questions and the nature of problems should demonstrate the intent of the study at the conceptualisation level. An analysis of the MMR in the three-year under review shows that graduate students in the Faculty of CIS failed to meet the conceptual requirements of the MMR when omitted words “mixed methods” in their titles. According to Guetterman (2017), mixed methods titles should include the words “mixed methods” and the titles should be short and precise. According to Guetterman (2017), a typical mixed methods title would read:

*In their own words and by the numbers: A mixed methods study of Latina community college presidents. (Munoz, Community College Journal of Research and Practice, 34(1-2), 153-174.)*

Those studies that alluded to methods aspect in their titles generally made reference to a case study, which is a as a strategy of inquiry not MMR. One such example was from a LIS dissertation and reads: “*The dissemination of agricultural research information to selected wards in Matobo district: a study case of Matopos research station*”

Another example from RAM reads: “*Use of E-learning resources at Zimbabwe Open University Harare campus*”

Further the studies used directional words such as ‘exploring’. Creswell (2015) cautions against using terms such as ‘explore’ etc., in an MMR study. One such example was from JMS and reads: “*Exploring the relationship between science communication and university image and reputation: A case study of NUST*”

Creswell and Plano Clark (2011) noted that research problems suited for mixed methods are those in which one data source may be insufficient, results need to be explained, exploratory findings need to be generalised, a second method needs to compliment a primary one, a theoretical stand needs to be employed and an overall objective can be addressed with multiple phases or projects. It was also found that the problems that were stated in all the studies (N=40) were suitable for mixed methods design. One study was concerned with how the media organisations are tapping into online advertising as a measure to remain viable and from this, it was deduced that the MMR was suitable in the sense that the results of the quantitative content analysis of online adverts required to be explained by in-depth interviews regarding the benefits yielded by the organisation from online adverts.

Creswell (2007) as cited by Schiazza (2013) noted that there are three approaches to writing MMR questions. The first one is to provide only a MMR question. The second one is to provide both a quantitative and qualitative research question, followed by a MMR question. The third approach is to provide qualitative and quantitative research questions but no MMR question. According to Schiazza (2013), this approach de-emphasizes the integrative aspects of the study by focusing on only the individual quantitative and qualitative components of the study. From the review of graduate studies, the second

approach was favoured by the students. However, the students failed to categorise their research questions as either qualitative or quantitative and did state a MMR question afterwards. Categorisation of the research questions is important because if a study is sequential, the research questions should allude to the component being addressed first. Research questions in mixed methods studies are vitally important because they, in large part, dictate the type of research design used, the sample size and sampling scheme employed, and the type of instruments administered as well as the data analysis techniques (i.e., statistical or qualitative) used (Onwuegbuzie & Leech, 2006).

Graduate dissertations were found to mix both the 'how' and 'what' questions without any particular order and it was very difficult to know the design in use. However, the use of how and why and what questions was found to be consistent with the dictates of mixed methods. According to Creswell (2003), mixed methods focus is on the 'how' and 'what' questions. This is buttressed by Saunders, Lewis and Thornhill (2009) who state that a pragmatic approach is a better process of answering the 'what', 'what' and 'how' research questions. However, another challenge in the use of MRR was identified where in some instances students would ask "what" questions only or 'how' question only. This kind of questioning demonstrated that the researchers failed to consider integration at conceptualisation when the questions were excogitated. Bryman (2007) perceives the poor development of MMR questions as a possible barrier to integration.

However, an analysis of graduate dissertations revealed their MMR was compromised by lack of time and financial resources needed. According to Creswell and Plano Clark (2011) mixed methods requires extensive time, resources and effort on the part of the researchers. All the reviewed studies (N=40) mentioned time and financial resources as the major challenges. It was established that the studies were completed in a period ranging from three to four months period. For example one study stated "the study was conducted in a limited period of time (from January to April 2016)." It was further discovered that all the studies were self-sponsored, meaning that students were limited financially to ensure that all the required resources to develop a complete MMR study. McKim (2017) puts it: "researchers typically require additional funding for added supplies, extra space to interview participants or administer a survey, and assistants to help with data collection and data analysis."

## **Integration Through Research Philosophy**

Research philosophy is conceptualised in terms of four sets of assumptions related to ontology, epistemology, axiology, and methodology (Saunders, Lewis, & Thornhill, 2016; Bryman & Bell, 2011; Creswell & Plato Clark, 2007). The major philosophical approaches that can be used to underpin MMR are pragmatism, critical realism transformative. Pragmatism as a research philosophy asserts that there are many ways of interpreting the world and undertaking research, that there is no single point of view can ever give the entire picture and that there are multiple realities (Bryman & Bell, 2011, p. 32). Critical Realism adopts and supports characteristics from both quantitative and qualitative approaches (Creswell & Plato Clark, 2011). The critical realist is of the view that there is no way in which the investigator can claim to have absolute certainty regarding the findings of their investigation. Key differences between pragmatism and critical realism can be found at "the epistemological level in that critical realism understands reality as a single reality that is probabilistically true and independent of the mind whilst pragmatists view reality as containing elements that are accessible and independent of the mind as well as elements that are constructed and therefore dependent on the mind" (Darracott, 2016). From an epistemological perspective, pragmatism already leans more towards MMR (Darracott, 2016). Equally, critical realism

is well suited to MMR because of the admission that research is undertaken to develop deeper levels of exploration and understanding (McEvoy & Richards, 2006 in Halcomb & Hickman, 2015). A transformative perspective suggests an orienting framework for a mixed methods study based on creating a more just and democratic society that permeates the entire research process, from the problem to the conclusions, and the use of results (Mertens, 2009).

Findings of the study indicate that all 40 graduate students who elected to use MMR mentioned pragmatism as their research philosophy. The reasons given for adopting pragmatism were rooted in the methodological set of assumptions. All the 40 graduate students did not reflect on the nature of reality (ontology), nature of knowledge (epistemology) and values (axiological) beliefs to justify pragmatism in their studies. These findings are similar to those of Bryman (2007) who discovered through interviews with U.K social researchers that MMR seem not to dwell on epistemological and ontological issues. The silence on the other sets of philosophical assumptions by students was perhaps done to “avoid clashes in the philosophical assumptions” (Tonkin-Crine et al., 2016, p. 2) that underlie the methods. However, within the methodological set of assumptions addressed by students, pragmatism was advanced on the basis of flexibility and eclecticism. For example, one study mentioned “pragmatism was selected as the philosophical basis for the study to enable the researcher to be flexibility in the choice of research methods...” and another study stated, “Pragmatism gave the researcher leeway to integrate methods within this study.” Another study justified pragmatism in terms of the methodology by stating that “it fits well with my research strategy- case study- chosen”. Another claimed, “the researcher opted for pragmatism because it can be underpinned in mixed methods design...” However, justifying the use of different methods in a study through pragmatism was criticised by Denzin (2012) because “pragmatist focus is on the consequences of action, not on combining methodologies” (p. 83).

Additionally, pragmatism was justified on the basis of practicality because it focuses on the problem or research question, for example, one study noted that “pragmatism view takes a practical orientation to a problem and finds a solution that fits a particular context” and another study stated, “pragmatism was necessary for this study because it does not focus on the data collection used but rather it pays attention to the problem.” Another study stated “pragmatism generates solutions which are fit for purpose.” However, students did not elaborate or make a follow-through on the nuances that are necessary to link problems and methods together. Hesse-Biber (2015) observed that just how the research question or problem enters into the MMR project remains woefully unarticulated. By focusing on “what works” approach, students were able to sidestep the hard ontological and epistemological issues surrounding the mixing of more than one paradigm in a single study. Such a framing of pragmatism by graduate students in MMR was criticised Hesse-Biber (2015) because it delinks pragmatism from its philosophical roots. From the study, findings it was therefore difficult to see how multiple realities advanced by pragmatism affected their studies or how ways of knowing intersected with their researches. Some students failed completely to justify the use of mixed methods in their studies and would just highlight the advantages and disadvantages of pragmatism from various scholars without linking the same to their own studies. For example, one study listed advantages and challenges as outline by Creswell (2003) without elaborating and contextualising them in their study.

## **Integration Through Design**

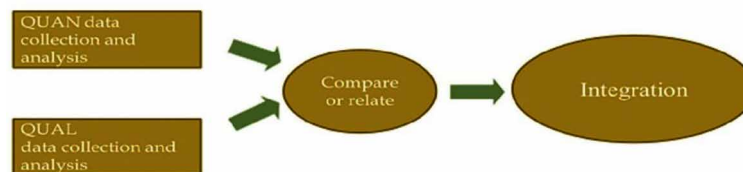
The integration of the qualitative and quantitative strands in mixed methods studies of graduate studies at the design level was partially done in a predominantly concurrent manner. Of the fourteen disserta-

tion that reported their integration at the design level, twelve (12) used the concurrent design. These results differ from those of Molina-Azorin and Cameron (2010) in management research community where sequential implementation of data collection was the most common implementation pattern. The prevalence uses of the concurrent mixed methods design by graduate students could have been informed by the research questions as noted earlier on by it could be due to constraints in time and resources. Usually, sequential designs demand more time and resources due to the phases involved. All the MMR studies mentioned time and financial resources as major constraints in their studies. A majority (N=26) of the mixed methods studies did not specify their integration preferences at the design level. Table 6 shows the results. From the analysis of graduate studies, it is noteworthy that all the graduate studies that did not indicate their MMR design were also silent about the priority of the qualitative and qualitative strands in their studies.

### **Visual Models for the MMR Designs**

A visual model which depicts a mixed methods procedure in a study is usually given to help the reader understand the whole in a single effort. An analysis of the LIS graduate studies revealed that all the studies did not include a visual representation of the mixed methods design adopted as suggested by Creswell (1999). An example of a visual display as provided by Guetterman (2017) is depicted Figure 1.

*Figure 1. An example illustrating a visual display (convergent mixed methods design) Source: Guetterman, 2017*



A visual display in Figure 1 shows a convergent mixed method design where qualitative data and quantitative data are collected and analysed at the same time frame for the purpose of comparing or relating. The lack of such visual models to characterise the MMR in the analysed dissertations of graduate students demonstrated the lack of craft competence and knowledge needed in developing a mixed method design.

### **Integration Through Methods**

One of the key principles of a MMR design is to identify the reasons for mixing quantitative and qualitative methods within a study. Mixed methods can be used for building, connecting, merging or embedding. Integration at the methods level was reported by thirty-six out of the forty dissertations and described their reasons for mixed methods. Twenty-eight of these studies employed mixed methods for *merging* purposes where both qualitative and quantitative strands were combined simultaneously. *Merging* was done through comparison where qualitative and quantitative data results on common themes were brought

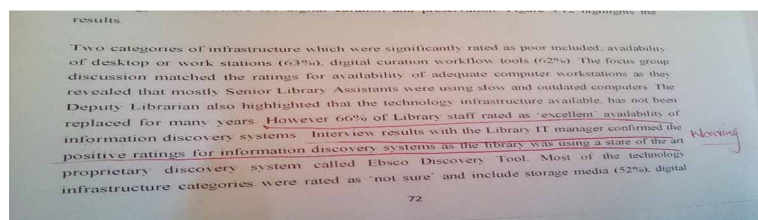
together iteratively to determine the extent to which the two forms of data confirm, contradict, or expand (this is demonstrated later in the chapter under fit of data integration). The merging of the two databases simultaneously was consistent with studies that chose the concurrent mixed methods design. Mixed methods researchers can give equal priority or weighting to both quantitative and qualitative research or prioritise qualitative or quantitative strands. The equivalent status/simultaneous design: QUAL+QUAN was favoured in the reviewed dissertations. The merging, as recorded in the dissertations, was done to increase the "... extent to which findings may be trusted and inference made" "credibility of results", "triangulation", "corroborating research findings", "relating results" "reduce bias", and "to compare". O’Cathain et al. (2007) in their studies found comprehensiveness as the reason for mixing methods. To achieve this, studies commonly employed questionnaires, interviews, and observation. Employing MMR for the reasons outlined above is nothing short of triangulation of data and methods to confirm results and not to generate new findings as is the case with triangulation in mixed methods (a section on fit of data integration demonstrates this). MMR goes beyond a mere superficial combination of data from quantitative and qualitative methods (Ngulube & Ngulube, 2015). Ngulube and Ngulube (2015) gleaned from several scholars who supervised graduate research that there is a lot of confusion around ‘triangulation’ as a concept used in social science methodology and ‘triangulation’ as a research design in MMR.

Four graduate dissertations integrated qualitative and quantitative strands for the purposes of *connecting* one database with another. To this end, the most common connection integration approach was to use qualitative data to support quantitative findings. In this case Equivalent status/ sequential design: QUAN→QUAL was preferred. Two studies identified *embedding* as the reason for using the mixed methods design where data collection and analysis link at various levels. Two studies used mixed methods for *building* purpose that is the studies started with a qualitative phase followed by the quantitative phase. Four studies were silent on the reasons for employing MMR.

## Integration Through Reporting and Interpretation

Integration at the interpretation and reporting level was achieved through the narrative approach by most of the dissertations (N=38). Results were connected to each other thematically, and the qualitative and quantitative data weaved back and forth around similar themes or concepts. Further analysis revealed that quantitative and qualitative findings that were synthesised through narrative both in the results, and discussion sections used weaving (N=27); contiguous (N=8) and staged (N=2). The weaving approach which involves writing both qualitative and quantitative findings together on a theme-by-theme or concept-by-concept basis was common with students. Figure 2 illustrates this weaving approach in one of the dissertations examined.

*Figure 2: Example illustrating a weaving approach*



The use of the weaving approach at the reporting and interpreting level demonstrated that the students were concerned more about relating and comparing results for the purpose confirming and validation and this was seen to be consistent with the goals of triangulation. The contiguous approach which involves the presentation of findings within a single report with the qualitative and quantitative findings reported in different sections was employed by studies that chose sequential designs. An example of a study that used contiguous approach looked at the factors that affected the use of an e-learning platform at a secondary school. The study distributed questionnaires to school pupils and conducted interviews with teachers. In reporting and interpretation of finding the study started by the quantitative findings derived the questionnaires and then presented qualitative findings from the interviews thereafter. Another integration approach which was rarely employed by the students is data transformation where one form of data is transformed into another form. In the two studies that employed this technique, qualitative data was transformed into quantitative data.

### **Fit of Data Integration in the MMR Dissertations**

The fit of data integration refers to coherence of the quantitative and qualitative findings (Fetters et al., 2013). The assessment of the fit of integration leads to three possible outcomes namely confirmation, expansion, and discordance. Forty MMR dissertations of graduate students were examined to establish the fit of data integration. Research questions posed by graduate students were used to track on how data was reported and interpreted. To this end, 160 research questions were recorded from the forty MMR dissertations with each dissertation averaging 4 research questions. The reported and interpreted findings for each research question were analysed to establish the outcome of integration between the qualitative and quantitative data sets. Statements that represented the possible outcomes of integration were recorded and quantified.

It was established that 83 statements represented a confirmation outcome where findings from both types of data confirm the results of the other. In most cases, students would use interviews as a method to confirm findings from questionnaires. Twenty-seven statements represented an expansion by describing complementary aspects of a central phenomenon of interest. In most cases, the qualitative data provided more detail regarding issues addressed in quantitative data. These findings support the argument by Giddings in Hesse-Biber (2015) who noted that mixed methods will only serve to strengthen the positivistic paradigm and qualitative approaches remain just “added and stirred” into a general “positivistic” methodological approach. Thirty-one statements indicating discordance where qualitative and quantitative findings contradict, conflict, or disagree with each other were recorded. Seventeen research questions reflected instances where single data set was reported and analysed and therefore were recorded as not applicable. Table 6 shows these findings and provides few statements of the range of recorded statements in dissertations describing the fit of data integration in terms of confirmation, expansion, and discordance.

Often, discordant results are of concern to MMR researchers who seek integration of qualitative and quantitative data sets. According to Fetters et al. (2013), investigators may handle discordant results by gathering additional data, re-analysing existing databases to resolve differences, seeking explanations from theory, or challenging the validity of the constructs. Graduate students dealt with discordant findings by either ignoring the discordance (N=20), seek corroboration with existing literature (N=7) or give precedence to the quantitative strand of the data (N=4). It was, therefore, inferred that students used these strategies because they were the most convenient because of limited time and resources and probably that students did not know what else to do with divergent data. In any case, the strategies used

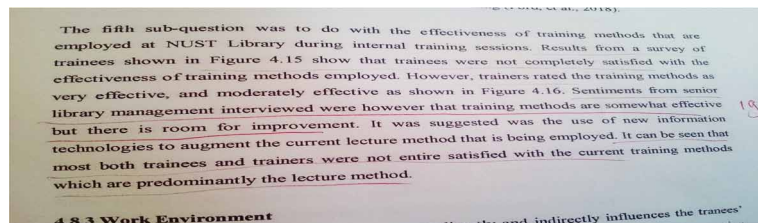


by graduate students did not benefit or add much value to the qualitative and quantitative findings in order create a “whole which is greater than the sum of the parts” because they did not lead to new findings or a richer understanding. An example of a study that had a questioned that ignored the discordance of findings is shown in Figure 3. The question asked by the student was to do with the effectiveness of training methods employed by NUST Library. Trainees were not satisfied with the effectiveness of training methods whereas trainers rated the training as effective. Although the researcher acknowledged the self-bias reporting inherent in the findings, nothing was done to solve the disagreement and instead made a neutral conclusion.

*Table 6. Fit of data for integration*

Fit of data integration	Number of students	Example of statements
Confirmation	83	“this was echoed in interviews with...” ‘Interviews results with IT manager confirmed the positive rating’ “through analysis of different circulars and memoranda, the researcher also noted this aspect” “Results from the questionnaire also revealed this aspect” “to validate the findings the researcher also noted through document analysis
Expansion	27	“Interviews with IT librarian explained that.....” “Focus groups revealed low confidence....” “Some participants went further.....”
Discordance	31	“In contrast to the survey findings...” “Contrary findings from the interviews...” “These results contradicted comments from...”
Not applicable	17	Single data set was reported and analysed

*Figure 3. Example of a question that ignored the discordance in findings*

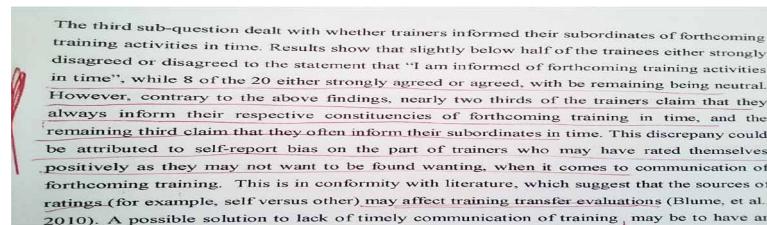


An example of a research question that sought corroboration from literature after discovering discordant findings looked at the transfer of training to the job at NUST Library; it looked at whether trainers informed their subordinates of the forthcoming training activities in time. This question generated incongruous results and the investigator was quick to seek corroboration from literature in order to neutralise the disagreements between data sets. Figure 4 illustrates this phenomenon.

An example of a research question that generated dissonance results and gave precedence to the qualitative strand had to do with the use of online reference services. The investigator wanted to know whether the use of online reference was related to gender. The investigator dealt with the challenge by giving precedence to the quantitative strands and concluded that woman had challenges in the use of

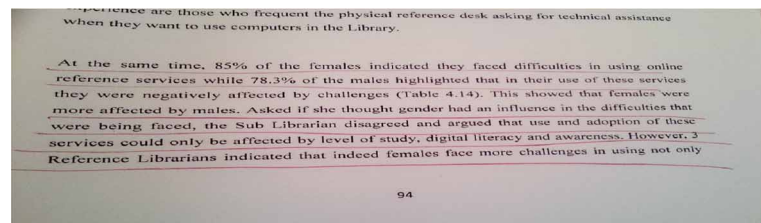
online references than their male counterparts despite the fact that interviews with respondents produced divergent results. This suggests that the investigator believed that acquiring knowledge through measurement was more superior to people's meanings and as a result discredited the results from the interviews. Figure 5 illustrates this phenomenon.

*Figure 4. Example illustrating corroboration from literature*



The third sub-question dealt with whether trainers informed their subordinates of forthcoming training activities in time. Results show that slightly below half of the trainees either strongly disagreed or disagreed to the statement that "I am informed of forthcoming training activities in time", while 8 of the 20 either strongly agreed or agreed, with the remaining being neutral. However, contrary to the above findings, nearly two thirds of the trainers claim that they always inform their respective constituencies of forthcoming training in time, and the remaining third claim that they often inform their subordinates in time. This discrepancy could be attributed to self-report bias on the part of trainers who may have rated themselves positively as they may not want to be found wanting, when it comes to communication of forthcoming training. This is in conformity with literature, which suggest that the sources of ratings (for example, self versus other) may affect training transfer evaluations (Blume, et al., 2010). A possible solution to lack of timely communication of training, may be to have an

*Figure 5. Example illustrating investigator giving precedence to the quantitative data set*



reference are those who frequent the physical reference desk asking for technical assistance when they want to use computers in the library.

At the same time, 85% of the females indicated they faced difficulties in using online reference services while 78.3% of the males highlighted that in their use of these services they were negatively affected by challenges (Table 4.14). This showed that females were more affected by males. Asked if she thought gender had an influence in the difficulties that were being faced, the Sub Librarian disagreed and argued that use and adoption of these services could only be affected by level of study, digital literacy and awareness. However, 3 Reference Librarians indicated that indeed females face more challenges in using not only

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In the final analysis, 14 (35%) of the 40 graduate studies who used the mixed methods design could be classified as MMR because they managed to include some aspects in all the levels of integration although these studies did not fully meet all the requirements of MMR. Important missing information was the categorisation of research question as either qualitative or quantitative information; incomplete titles, type of analysis used to answer each of the research questions; if more than one type of methods were used for a given research question. The remainder, 65% (N=26) were underdeveloped because they lacked critical components or features that identify a MMR such as design, methods and justification for engaging MMR at philosophical, method and data integration level. Further, integration was done for the purpose of triangulating results one type of data sets, that is, qualitative data confirming the findings of the quantitative one. The way students dealt with discordant result further demonstrated that they did not benefit much from the integration of qualitative and quantitative data sets. Tables 7 summarises findings using the conceptual framework developed for the study.

## **FUTURE RESEARCH DIRECTIONS**

The study discovered that MMR was widespread in LIS in the three years under consideration compared to JMS and RAM. An empirical investigation as to why JMS and RAM students were not commonly using MMR in their studies would be of interest because the new direction in research is the interplay of

*Integration in Mixed Methods Research Designs by Graduate Students at the University*

methods in generating knowledge. In the same vein, it would be of interest to know why JMS and RAM students predominantly use qualitative research in their studies. Is it something to do with the nature of their studies or it is a shortfall?

*Table 7. Level of the study where the integration was done*

Integration level	Approaches	Description	Studies
Conceptualisation (N=40)	<ul style="list-style-type: none"> <li>● Title</li> <li>● Statement of the problem</li> <li>● Research questions</li> <li>● Feasibility</li> </ul>	<b>Title:</b> should contain the words mixed methods	<b>0</b>
		<b>Problem:</b> suitability of mixed methods design	Suitable = <b>40</b>
		<b>Research questions:</b> must allude to mixed methods	<b>0</b>
		<b>Feasibility-</b> in terms of time, resources and skills	<b>0</b>
Philosophy of science(N=40)	<ul style="list-style-type: none"> <li>● Pragmatism</li> <li>● Critical realism</li> <li>● Transformative</li> </ul>	<b>Four set of assumptions</b>	
		<b>Ontology:</b> nature of reality	<b>0</b>
		<b>Epistemology:</b> nature of knowledge	<b>0</b>
		<b>Axiology:</b> values	<b>0</b>
Design (N=14)	<b>3 core designs</b> <ul style="list-style-type: none"> <li>● Exploratory sequential</li> <li>● Explanatory sequential</li> <li>● Convergent</li> </ul>	<ul style="list-style-type: none"> <li>● <b>Exploratory sequential:</b> Two-phase. Qual ► Quan</li> </ul>	<b>2</b>
		<ul style="list-style-type: none"> <li>● <b>Explanatory sequential:</b> Two-phase. Quan ► Qual</li> </ul>	<b>0</b>
		<ul style="list-style-type: none"> <li>● <b>Convergent:</b> This involves collecting both quantitative and qualitative data simultaneously Qual ↓ → Compare/relate Quan</li> </ul>	<b>12</b>
Methods (N= 36)	<b>Purpose</b> Quan-Qual: <b>Connecting</b> <ul style="list-style-type: none"> <li>● Qual-Quan: <b>Building</b></li> <li>● Both Qual and Quan at the same time: <b>Merging</b></li> <li>● <b>Embedding:</b> involve any combination of connecting, building, or merging</li> </ul>	<b>Connecting:</b> one database links to the other through sampling.	<b>4</b>
		<b>Building:</b> one database informs the data collection approach of the other.	<b>2</b>
		<b>Merging:</b> the two databases are brought together for analysis.	<b>28</b>
		<b>Embedding:</b> data collection and analysis link at multiple points.	<b>2</b>
Interpretation and reporting (N=40)	<b>Style</b> <ul style="list-style-type: none"> <li>● Narratives</li> <li>● Data transformation</li> <li>● Joint displays</li> </ul>	<b>Narratives</b>	
		Weaving	<b>27</b>
		Contiguous	<b>8</b>
		Staged	<b>2</b>
		<b>Data transformation-</b> transforming one form of data into another form.	<b>2</b>
		<b>Joint displays:</b> integrate the data by bringing the data together through a visual means to draw out new insights	<b>1</b>

## CONCLUSION

It can be concluded that MMR in the Faculty of CIS has not gained roots across departments save for LIS department which had been consistent in applying the method since 2016, albeit uncritically. The study found that majority of the MMR 81.8% (N= 33) came from the department of LIS. JMS and RAM held a negligible 10% (N=4) and 8, 2% (N=3) respectively. Qualitative research still dominates the research methodologies in the Faculty of CIS as it was established that 53, 6% (N=51) of the dissertations in the Faculty of CIS at the NUST used qualitative research design. Graduate students lacked the requisite skills to conduct full MMR as most of the studies were underdeveloped and lacked details about integration. For example, pragmatism was chosen as a research philosophy however it was not adequately justified in the dissertations. The integration of qualitative and quantitative aspects at methods and analysis level sets up students to confuse and conflate triangulation with MMR. Integration of qualitative and qualitative findings was primarily done to confirm the results of the other and in most cases the qualitative aspects were used to confirm the quantitative findings. This approach to integration did not lead to new findings or a richer understanding and in most cases graduate students dealt with discordant findings by seeking corroboration from literature and in some cases ignore the discordance or give precedence to the quantitative results.

It can only be inferred that the limited time students operated with to complete their dissertation meant that was impossible for students to gather additional data, challenging the validity of the constructs, or re-analysing existing databases to resolve differences as suggested by various scholars (Tonkin-Crine et al., 2016; Pluye, 2014; Fetters et al., 2013). The fact that students did not acknowledge the challenges of integration buttresses the point that they had insufficient understanding of the method. Additionally, the paucity of practical examples of how integrated can be achieved leaves students without examples of best practices to inform their own practice (Bryman, 2007). Given the above, it is recommended that graduate students should use this method with caution because quantitative and qualitative findings were either not integrated or integrated to only a limited extent. Further, the Faculty should develop a mechanism that ensure those students who wish to use the method gain enough knowledge and experience before they are thrown into the deep end.

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## **KEY TERMS AND DEFINITIONS**

**Dissertations:** Is a philosophical treatise addressing a knowledge gap and/or practical problem through research and is usually done for an advanced academic degree.

**Graduate Students:** A graduate student is someone pursuing a post-graduate degree in a particular field.

**Integration:** Is a deliberate, calculative joining of quantitative and qualitative elements in a single study for the purposes of casting new light to a phenomenon under scrutiny.

**Mixed Methods Research:** Is a research design that combines both quantitative and qualitative elements throughout the research process, from the world view assumptions to the analysis and reporting of data.

**Paradigm:** A paradigm is set of belief systems underlined by ontological, epistemological axiological and methodological assumptions.

**Qualitative Research:** Is one which a researcher focuses on the meanings participants ascribe to a social phenomenon.

**Quantitative Research:** Is an investigation where the researcher relies on measurement and highly structured observation to discover cause-effect relationship between phenomena.

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# Chapter 17

## Mixed Methods Research Design

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### **ABSTRACT**

*This chapter introduces the various design choices researchers need to decide on prior to conducting the study. The chapter starts with a detailed description of what research design is, followed by an explanation of descriptive, explanatory, or exploratory research questions. This determines what type of data will be collected. The major strategic implementation methods for quantitative, qualitative, and mixed methods are then discussed. The three strategies for mixed methods research—parallel convergent, sequential, and embedded design—are presented in detail along with the rationale for their use. Finally, in the last section, the strands or sequencing of the data collection phase of the study are explained.*

### **INTRODUCTION**

After the method for the research is determined--qualitative, quantitative or mixed methods the researcher needs to determine the design. Various designs can be employed and researchers need to determine which design best fits the purpose of their study. Researchers need to know where the design fits in the whole research process from framing the research purpose and question(s), data collection and analysis, to finally reporting the findings. Each design has specific advantages and disadvantages. Which one the researcher selects depends on the objective of the study and the nature of the phenomenon (Hartley & Muhit, 2003). Researchers can decide to use a quantitative, qualitative, or a mixed methods design. This chapter introduces the various approaches aligned with each design.

### **What is Research Design?**

The research design is a framework or blueprint which gives structure and direction to show how all the major parts of the research project work together to address the research question (Malhotra, 2004). It is the logical structure of an inquiry grounded in the research purpose and research question(s) (Mertens,

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2005). Furthermore, Creswell (2007) refers to designs as “procedures for collecting, analyzing, interpreting, and reporting data” (p. 58). It details the procedures necessary for obtaining the information needed to structure or solve the research question(s) (Malhotra, 2004). This implies that the researcher needs to decide on the design before the study can begin.

The research design does not imply or dictate any method of collecting data or any type of data. How the data are collected is irrelevant to the logic of the design. Any research design can, in principle, use any type of data collection method and utilize either quantitative or qualitative data, as research design is different from the method by which data are collected. The main purpose of the research design is to reduce the ambiguity of research evidence providing a step by step approach to the entire research plan reducing the possibility for errors to be made.

There are numerous research designs ranging from simple in nature to overly complex; however, for the purpose of this chapter, the number of designs is limited to the three major ones in order not to overwhelm beginning researchers. Mixed methods may be the best design-approach when both quantitative and qualitative data together, will provide a richer understanding of the phenomenon being studied. So, a mixed methods research design is a procedure for mixing both methodologies in a single study to obtain evidence needed to provide a deep understanding of the research problem.

We know that the research question drives everything, including the methodology and research design. When conducting research, researchers need to follow a plan for how the study will unfold and the various steps taken from data collection tools through data analysis. The function of the design is to ensure that a blueprint is in place and that the researcher has collected enough data and analyzed the findings so that the initial research question(s) can be addressed. In other words, when designing research, one needs to ask: given this research question (or theory), what type of data will I need to collect in order to address the research objective? Researchers need to think through, carefully, what type of information is required to answer the research question(s). One can argue that the validity and reliability of the research findings are directly tied to the amount of upfront logical planning the researcher invested in the design process at the beginning.

The way in which researchers develop research designs is fundamentally affected by whether the research question is descriptive, explanatory, or exploratory as this affects what information is collected. Social researchers ask the following types of research questions:

1. What is going on (descriptive research)?
2. Why is it going on (explanatory research)?
3. How is it that it is going on? (Exploratory research)

## **Descriptive Research**

The purpose of this research design is to observe, describe, and document aspects of events as they naturally unfold (Polit & Hungler, 1999). This is like exploratory research as there is no attempt to test hypotheses. Many scientific disciplines, especially social science and psychology use descriptive research to obtain a general overview of the subject or characteristics of an organization or community. Thus, descriptive research is playing an important role in providing data by providing a snapshot of what is going on at a specific point in time surrounding the research topic under study, focusing on the “what” is happening. As a result, descriptive research is also an effective approach to making predictions of certain outcomes, for example, how many will vote for a certain political candidate or how many will purchase

a product or attend a certain university? Leedy and Ormrod (2010) posit that a descriptive approach is used in order to “see explanations and predictions that will generalize to other persons and places” (p. 95).

Descriptive studies can yield rich data that lead to important recommendations through the data collection tools of surveys, observation, interviews, and portfolio (AECT, para.20). A survey is a research study in which data are collected from the members of a sample, for the purpose of estimating one or more population parameters (Jaeger, 1997, p. 450). For certain studies, subjects can only be observed in a way as to not affect behavior. This type of research design involves observing and describing the behavior of a subject without influencing. Descriptive research has been dismissed as ‘mere description’ (New York University, n.d., para. 3); however, detailed description is fundamental to the research enterprise and it has added immeasurably to the knowledge of the shape and nature of society. Good description of ‘what’ is going on provokes the ‘why’ questions of explanatory research.

## **Explanatory Research**

Explanatory research focuses on “why” questions. This is a logical way to inquire after things become known or have been described. “For example, it is one thing to describe the crime rate in a country, to examine trends over time or to compare the rates in different countries. It is quite a different thing to develop explanations about why the crime rate is as high as it is, why some types of crime are increasing or why the rate is higher in some countries than in others;” namely, looking for the reason why a chain of events occur (New York University, n.d., p. 2). Answering the ‘why’ questions involves developing causal explanations. Causal explanations argue that phenomenon Y (for example, level of education) is affected by factor X (for example, parental socioeconomic status).

With explanatory research a researcher conducts causal research or theory-testing. This type of research design is also known as “deductive,” “hypothesis-testing,” and “predictive.” Deductive reasoning starts with a general theory pertaining to the research topic which is then converted into a testable hypothesis(es). This is followed by observations addressing the hypothesis(es). Trochim (2006) notes that “this ultimately leads us to be able to test the hypotheses with specific data -- a *confirmation* (or not)” of the original theory (para. 1). The idea is to test a theory by working out some of the specific implications of the theory (hypothesis) and then collecting data to see if the hypothesis is supported or not. Theory-testing often take place after exploratory work has already been done-- leading to new theory. All studies (except descriptive) are interested in causality as all theories are causal. While causality is complex, the main purpose behind theory-testing studies is basically about testing whether it’s true that ‘A’ causes ‘B’ and why.

## **Exploratory Research**

Exploratory research seeks to determine “how” is it that things are happening. This type of research design is also known as “inductive” or “theory-building” focusing on “specific observations to broader generalizations and theories” (Trochim, 2006, para. 2). In this kind of study, there is movement from specific observations to broader generalizations and theories. The researcher does not start with a theory. Instead, data are collected and analyzed, and the data are used to develop a theory. For example, a researcher may want to explore how it is that bullying does not exist in certain schools while in others it flourishes. A study may then be designed to test the theory (explanatory). So, the purpose of most exploratory studies is to develop a causal theory which can then be tested later.

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Figures 1 and 2 outline the steps to designing a research study based on a deductive or inductive approach.

Figure 1. Deductive approach

Source: Trochim, 2006

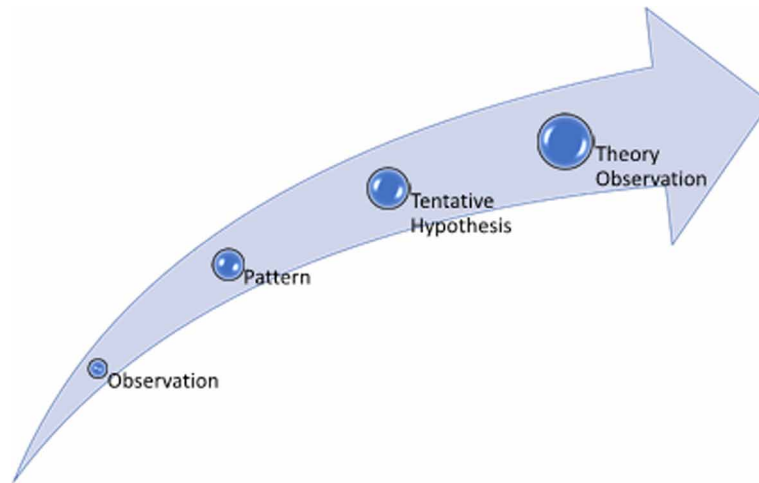


Figure 2. Inductive approach

Source: Trochim, 2006



## Strategies Associated with Quantitative Design

Quantitative data can be useful in obtaining generalized answers to research questions related to a large group of people. However, quantitative data often is not suitable to getting specific answers or explanations related to research questions. Quantitative research is a mode of inquiry used often for deductive research following the scientific method to test theories or hypotheses, gather descriptive information about variables, examine relationships among variables, or “to determine cause and effect interactions between variables” (Burns & Grove, 2005, p. 23). Furthermore, the authors define quantitative research as, “a formal, objective, systematic process in which numerical data are used to obtain information about the world” (p. 23). These variables are measured and yield numeric data that can be analyzed statistically. Social surveys and experiments are frequently viewed as prime examples of quantitative research and are evaluated against the strengths and weaknesses of statistical, quantitative research methods and analysis. Quantitative (mainly deductive) methods are ideal for measuring pervasiveness of “known” phenomena and central patterns of association, including inferences of causality Pasick et al., (2009). “Quantitative data have the potential to provide measurable evidence, to help establish (probable) cause and effect, to yield efficient data collection procedures, to create the possibility of replication and generalization to a population, to facilitate the comparison of groups, and to provide insight into a breadth of experiences” (U.S. Department of Health & Human Services, 2015, para. 6). Creswell (2012) noted the major characteristics of quantitative research:

1. Describing a research problem through a description of trends or a need for an explanation of the relationship among variables
2. Providing a major role for the literature through suggesting the research questions to be asked and justifying the research problem and creating a need for the direction (purpose statement and research questions or hypotheses) of the study
3. Creating purpose statements, research questions, and the hypotheses that are specific, narrow, measurable, and observable
4. Collecting numeric data from many people using instruments with preset questions and responses
5. Analyzing trends, comparing groups, or relating variables using statistical analysis, and interpreting results by comparing them with prior predictions and past research
6. Writing the research report using standard, fixed structures and evaluation criteria, and taking an objective, unbiased approach. (p. 13)

Typical quantitative approaches used in the social sciences are *descriptive*, *correlational*, *true experimental design* and *quasi experimental design*. The author explains the difference between true experimental design and quasi experimental design below.

### True Experimental Design

True experimental design is regarded as the most accurate form of experimental research in that it tries to find support or lack thereof for a hypothesis mathematically with statistical analysis. In this design, groups are randomly selected. For an experiment to be classified as a true experimental design, it must fit all of the following criteria.

### **Mixed Methods Research Design**

1. The sample groups must be assigned randomly.
2. There must be a viable control group.
3. Only one variable can be manipulated and tested. It is possible to test more than one, but such experiments and their statistical analysis tend to be cumbersome and difficult.
4. The tested subjects must be randomly assigned to either control or experimental groups.

### **Quasi Experimental Design**

Quasi Experimental design involves selecting groups, upon which a variable is tested, without any random pre-selection processes. The data collection tool used is usually a survey.

### **Strategies Associated with Qualitative Design**

Qualitative data can provide meaning and context regarding the people and environments of study but unable to provide generalized findings because the number and range of participants is low. Both methods—qualitative and quantitative-- used together, can complement each other. A salient strength of qualitative research is its focus on the contexts and meaning of human lives and experiences for the purpose of inductive or theory-development driven research. It is a systematic and rigorous form of inquiry that uses methods of data collection such as in-depth interviews, ethnographic observation, and review of documents. Qualitative (mainly inductive) methods allow for identification of previously unknown processes, explanations of why and how phenomena occur, and the range of their effects (Pasick et al., 2009). Creswell (1998) notes that: “Qualitative research is an inquiry process of understanding based on distinct methodological traditions of inquiry that explore a social or human problem. The researcher builds a complex, holistic picture, analyzes words, reports detailed views of informants, and conducts the study in a natural setting” (p. 15). Qualitative data help researchers understand processes, especially those that emerge over time, provide detailed information about setting or context, and emphasize the voices of participants through quotes and provide a depth of understanding of concepts. Typical qualitative approaches used in social science are narrative research, phenomenological research, ethnographies, grounded research, and case study.

### **Narrative Research**

Narrative research is a form of inquiry in which the researcher studies the lives of individuals and asks one or more individuals to provide stories about their lives. This information is then retold or re-storied by the researcher into narrative chronology. In the end, the narrative combines views from the participant’s life with those of the researcher’s life in a collaborative narrative. Harley-Davidson collects narrative information during its annual Possee Ride from hundreds of riders who describe their experiences with their Harley. All top managers listen-in to these nightly narratives during cross-country trips lasting a week or more.

### **Phenomenological Research**

Phenomenological research is characterized by the researcher identifying the “essence” of human experiences concerning a phenomenon, as described by participants in a study. The researcher describes

and interprets the experiences of participants to understand their perspectives based on the belief that there are multiple ways of interpreting the same experience, and the meaning of that experience is what constitutes reality. Understanding the “lived experiences” marks phenomenology as a philosophy as well as a method, and the procedure involves studying a small number of subjects through extensive and prolonged engagement to develop patterns and relationships of meaning. In this process, the researcher “brackets” his or her own experiences in order to understand those of the participants in the study. This research design is focused on what is essential for the meaning of the event, episode, or interaction. Researchers studying the impact of war on soldiers find that treatment of post-traumatic-stress syndrome involves not just the soldier but the soldiers’ network of family, friends and associates.

## **Ethnography**

Ethnography is an approach in which the researcher studies an intact cultural or social group in a natural setting over a prolonged period by collecting, primarily, observational data culminating in an in-depth description and interpretation of cultural patterns and meanings. A rich description generally includes shared patterns of beliefs, normative expectations, behaviors, and meanings. The research process is flexible and typically evolves contextually in response to the lived realities encountered in the field setting. Researchers can be simply observers or observer-participants. A researcher studying sky-divers actually participated in hundreds of sky-dives in order to better understand subjects and their group culture.

## **Grounded Theory**

Grounded theory offers the researcher an opportunity to derive a general, abstract theory of a process, action, or interaction grounded in the views of participants in a study. This process involves using multiple stages of data collection and the refinement and interrelationship of categories of information. Two primary characteristics of this design are the constant comparison of data with emerging categories and theoretical sampling of different groups to maximize the similarities and the differences of information. Hypotheses are generally developed after the research as opposed to before the research. For example, in studying the success of Indian firms researchers noticed the strong emphasis on training, development and empowerment of middle-managers, allowing them to make important tactical changes, when necessary, immediately in the field. This finding then led to a hypothesis explaining Indian-firm success due to middle-manager empowerment.

## **Case Study**

Case study is a design in which the researcher explores a program, an event, an activity, a process, or one or more individuals in-depth. The case(s) are bounded by time and activity, and researchers collect detailed information using a variety of data collection procedures over a sustained period culminating in an in-depth analysis of one or more events, settings, programs, groups, or other “bounded systems.” Creswell (1998) defines case study as “an exploration of a “bounded system or a case (or multiple cases) over time through detailed, in-depth data collection involving multiple sources of information rich in context” (p. 61). Yin (2003) describes the case study as a research strategy: “As a research strategy, the case study is used in many situations to contribute to our knowledge of individual, group, organizational, social, political, and related phenomena” (p.1). He further urges: “In brief, the case study method allows

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investigators to retain the holistic and meaningful characteristics of real-life events—such as individual life cycles, organizational and managerial processes, neighborhood change, international relations, and the maturation of industries” (p. 2).

Case studies are often seen as prime examples of qualitative research which adopts an interpretive approach to data, studies things within their context and considers the subjective meanings that people bring to their situation. Yin (2003) describes the case study as a research strategy: “As a research strategy, the case study is used in many situations to contribute to our knowledge of individual, group, organizational, social, political, and related phenomena” (p.1). A further holistic case study approach was shared by Yin (2003): “In brief, the case study method allows investigators to retain the holistic and meaningful characteristics of real-life events—such as individual life cycles, organizational and managerial processes, neighborhood change, international relations, and the maturation of industries” (p. 2)

A study of Marquee nightclub in New York city, which had been successful for three times the life of a typical nightclub, highlighted the importance of personal recognition of heavy-users in order to keep revenues high.

Types of case studies:

1. Historical organizational - focus on the development of an organization over time
2. Observational - study of a single entity using participant observation
3. Life history (i.e., oral history) - a first-person narrative completed with one person
4. Situation analysis - a study of a specific event from multiple perspective
5. Multi-case - a study of several different independent entities
6. Multi-site - a study of many sites and participants with the main purpose of which is to develop theory

## **Rationale for Mixed Methods and Sequencing of the Data Collection**

Mixed Methods Research supports the use of multiple research techniques to obtain answers to the research questions and encourage researchers to have a diverse approach towards research method selections (Johnson & Onwuegbuzie, 2004; Klassen, Creswell, Clark, Smith, & Meissner, 2012; Creswell, Klassen, Plano Clark, & Smith, 2011).

Creswell and Plano Clark (2007) noted: “Mixed methods research is “practical” in the sense that the researcher is free to use all methods possible to address a research problem. It is also “practical” because individuals tend to solve problems using both numbers and words, they combine inductive and deductive thinking, and they (e.g., therapists) employ skills in observing people as well as recording behavior” (p. 10). The rationale for using mixed methods needs to fit the research purpose. Creswell (2009) indicates a mixed methods rationale leads to a better understanding of a “research problem by converging or triangulating broad numeric trends from quantitative research and the detail of qualitative research” (p. 121). A mixed methods approach provides the researcher with an opportunity to utilize both methods and provides a multitude of choices. Creswell and Plano Clark (2011) state the components needed for mixed method research: “In mixed methods research, the data collection procedure consists of several key components: sampling, gaining permissions, collecting data, recording the data, and administering the data collection” (p. 171).



## Framework for Conducting Mixed Methods Research

The researcher needs to make decisions about the type of data to be collected and when in the research process it should be collected. For example, starting with quantitative data, a researcher will have the opportunity to test findings during a follow up qualitative data collection phase gaining insights that can help explain initial first phase results. Similarly, collecting qualitative data initially, especially when there may be limited understanding on a topic, will provide an opportunity to collect pertinent information about a phenomenon that will aid the researcher in designing a quantitative instrument. This is the implementation stage of the study which pertains to the order in which data are collected. Creswell (2009) asserts a strategic approach to planning for mixed methods considering four aspects: timing, weighting, mixing, and theorizing (p. 206). Within the context of a mixed methods approach, timing can be sequentially or concurrent; weight or priority may emphasize one type of study over another – qualitative over quantitative or vice versa; mixing the data, integrating, or embedding data relative to the research study and the research question(s); and, theorizing where the existence of a theory is present early in a mixed methods research study impacting the design of the study (Creswell, 2009, pp. 206-208). A credible and robust mixed methods design addresses the decisions of level of integration, priority, timing, and mixing. A systematic framework was suggested by Creswell (2003) for conducting mixed methods research. In this framework, mixed method research designs are classified according to two major dimensions:

1. Time order (Time ordering of the qualitative and quantitative phases is another important dimension, and the phases can be carried out sequentially or concurrently)
2. Paradigm emphasis (i.e., deciding whether to give the quantitative and qualitative components of a mixed study equal status or to give one paradigm the dominant status).

Two other dimensions for viewing mixed methods research are the degree of mixing and where mixing should occur (e.g., in the objective[s], methods of data collection, research methods, during data analysis, or data interpretation). Yet another important dimension is whether one wants to take a critical theory/transformational-empowerment approach or a less explicitly ideological approach to a study. Research studies can involve mixing of qualitative and quantitative approaches in several ways. This is because there could be so many potential dimensions of classification. This key characteristic of mixed method research provides an unlimited potential for future research (Johnson & Onwuegbuzie, 2004).

Each design varies according to the implementation, priority and integration of the data collected (Cameron, 2009).

Additionally, a mixed methods approach requires a multitude of decisions as to how to design the study and how much importance and weight each approach will play in the design. Each methodology can carry equal weight or either approach can carry more weight than the other. Priority of data is “whether greater *priority* or weight is given to the quantitative data and analysis. The priority might be equal, or it might be skewed toward either qualitative or quantitative data.” Priority occurs in a mixed methods study through such strategies as whether quantitative or qualitative information is emphasized first in the study, the extent of treatment of one type of data or the other and use of a theory as an inductive or deductive framework for the study.

Sequencing decisions will also need to be determined. Options include:

1. Collect both quantitative and qualitative data at the same time

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2. Collect quantitative data first followed by qualitative data
3. Collect qualitative data followed by quantitative data

For example, a researcher wants to determine the impact of a reading program on student achievement and engagement. She collects pre-reading scores (quantitative data) and observes students in their classroom using the traditional reading curriculum (qualitative data). Throughout the implementation period she continues to collect weekly reading scores and observations. In addition, she conducts in-depth interviews with the teachers and parents after the program conclusion. Numerous decisions pertaining to research design had to be made. However, the decision as to the design is driven by the purpose of the study.

Finally, the researcher connects the data. The “point of interface” (Morse & Niehaus, 2009), or the point where mixing occurs, differs depending on the mixed methods design. This “point” may occur during data collection (e.g., when both quantitative items and qualitative open-ended questions are collected on the same survey), during data analysis (e.g., when qualitative data are converted or transformed into quantitative scores or constructs to be compared with a quantitative dataset), and/or during data interpretation (e.g., when results of quantitative analyses are compared with themes that emerge from the qualitative data).

Creswell and Plano Clark (2011) define the key components that the researcher needs in designing and conducting a mixed methods study:

1. Collects and analyzes persuasively and rigorously both qualitative and quantitative data (based on research questions);
  2. Mixes (or integrates or links) the two forms of data concurrently by combining them (or margining them), sequentially by having one build on the other, or embedding one within the other;
  3. Gives priority to one or to both forms of data (in terms of what the research emphasizes);
  4. Uses these procedures in a single study or in a multiple phase of a program of study;
  5. Frames these procedures within philosophical worldviews and theoretical lenses; and
  6. Combines the procedures into specific research designs that direct the plan for conducting the study.
- (p. 5)

## Types of Mixed Methods Design

The following table outlines the strategies associated with quantitative, qualitative, and mixed methods approaches (Figure 3). Four basic strategies are typically associated with mixed methods: The Parallel Convergent Design, Sequential Explanatory, Sequential Exploratory, and Embedded Design.

Figure 3.

Quantitative Research	Qualitative Research	Mixed Methods
<ul style="list-style-type: none"><li>•Descriptive</li><li>•Correlational</li><li>•True Experimental</li><li>•Quasi-Experimental (Non-Experimental)</li></ul>	<ul style="list-style-type: none"><li>•Narrative</li><li>•Phenomenological</li><li>•Ethnography</li><li>•Grounded Theory</li><li>•Case Study</li></ul>	<ul style="list-style-type: none"><li>•Parallel Convergent</li><li>•Sequential Explanatory</li><li>•Sequential Exploratory</li><li>•Embedded</li></ul>

## **Major Mixed Methods Data Collection & Analysis Approaches**

The following sections present a detailed overview of each of the four common mixed methods designs (Creswell & Plano Clark, 2007).

### **The Parallel Convergent Design**

In this design, quantitative and qualitative methods are simultaneously implemented in order to analyze and combine the findings of the same question into an overall interpretation. The purpose is to generate a more comprehensive understanding of the research topic by combining the two results. The researcher collects, analyzes, and merges both types of data and results at the same stage, as quantitative and qualitative data analyses are equally applied. After data interpretation, the results are compared or combined. This design can be applied across disciplines and has often been referred to by various names such as Simultaneous Triangulation (Morse, 1991), Parallel Study (Tashakkori & Teddlie, 1998), Convergence Model (Creswell, 1999), and Concurrent Triangulation (Creswell, Plano Clark, Gutmann, & Hanson, 2003).

### **Why use Parallel Convergent Design?**

According to Morse (1991), the purpose of the parallel convergent design is “to obtain different but complementary data on the same topic” (Morse, 1991, p. 122) in order gain better understanding of the research problem. This design is efficient and provides simultaneous data collection of both quantitative and qualitative data. Each type of data can be collected and analyzed separately and independently, using their respective techniques. The parallel convergent design brings together these strengths and weaknesses to directly compare quantitative findings with qualitative findings for corroboration and validation purposes (Patton, 1990). This design can also be used by researchers to support the quantitative findings with the qualitative findings and to combine quantitative and qualitative results in order develop a more comprehensive understanding of the research problem.

This design is suitable for team research where the team includes individuals having expertise in both quantitative and qualitative research techniques. While most popular, this design is also the most challenging of the major mixed method designs. Use of this design requires much effort and expertise because of the concurrent data collection and the fact that equal priority is generally attached with each data type. To address this challenge, researchers can either form a team of individuals having expertise in quantitative and qualitative research techniques or train a single researcher in both quantitative and qualitative research techniques. Researchers need to consider the consequences of having different samples and different sample sizes when merging the two data sets. Sample sizes may vary because both data types are usually collected for different purposes. To merge two very different data sets and their results can be a daunting challenge. The research study designs should be such that quantitative and qualitative data address the same concepts so that merging of data sets is facilitated. The quantitative and qualitative results may not agree. In this case, contradictions may provide new insights into the topic. At the same time these contradictions present additional challenges to the researchers as these differences can be difficult to resolve and may require the collection of additional data. Researchers need to decide as to what type of additional data to collect or to reanalyze. This additional data could be quantitative data,

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qualitative data, or both. According to Clark & Creswell (2011) researchers would need to either collect additional data or reexamine the existing data to address this challenge.

### Designing a Parallel Convergent Study

In the first step, both qualitative and quantitative data are collected. The researcher converges quantitative and qualitative data in order to provide a comprehensive analysis of the research problem. In this design, the investigator collects both forms of data at the same time during the study and then integrates the information in the interpretation of the overall results. For example, a researcher may want to investigate employees' overall satisfaction with a health care program. Quantitative data are collected using a close-ended instrument measuring overall satisfaction with the program. In addition, at the same time, qualitative data are collected through focus groups and in-depth interviews with a random sample of participants in order to determine what additional services and programs may be needed or desired. The findings are then converged through statistical analysis of the quantitative data as well as interview findings revealing certain themes of information to best determine the overall satisfaction levels and health care needs and preferences as deemed by the employees. In other words, the data analysis consists of merging data and comparing the two sets of data and results as the objective is to obtain a more complete understanding of two sets of data. The same level of importance is attached to both types of data.

In the second step, a separate and independent analysis of both types of data is performed using typical analytical procedures related to each data type. In the third, step the results of both types of data analysis are validated and related. In the last and final step, the researcher interprets the results to find out whether the two results converge, diverge from each other, or relate to each other (Creswell & Plano Clark, 2007).

Figure 4. Steps in designing a Parallel Convergent Design study



### Sequential Procedures (Explanatory and Exploratory) Design

In this design, the researcher seeks to elaborate on or expand the findings of one method with another method. The idea is to have one dataset build on the results from the other. This is known as sequential design, and may begin by a qualitative exploration followed by a quantitative follow up or by a quantitative analysis explained through a qualitative follow up. This may involve beginning with a qualitative method for exploratory purposes and following up with a quantitative method with a large sample so

that the researcher can generalize results to a population. For example, a market researcher can use focus group interview data findings from a sample of consumers to develop scales to be used in a quantitative instrument.

Alternatively, the study may begin with a quantitative method in which theories or concepts are tested, to be followed by a qualitative method involving detailed exploration with a few cases or individuals. A popular approach in the social sciences is the latter in which qualitative data help to explain in more depth the mechanisms underlying the quantitative results. A researcher exploring caretakers of cancer patient's quality of life may first start with a large sample quantitative instrument and follow up with in-depth interviews with a small sample to investigate further some of the quantitative findings to better understand the responses on the scale(s). "The straightforward nature of this design is one of its main strengths" (Creswell, 2009, p. 211).

The quantitative data collection and analysis gets priority when addressing the research questions. Once the second qualitative phase is completed, the researcher interprets the qualitative analysis results to see if they help explain the initial quantitative results. For example, a research study may seek to identify significant predictors of adolescent drug use. The researcher would first conduct a quantitative phase in which quantitative data will be collected and analyzed to identify significant predictors of adolescent drug use. This analysis may reveal some surprising findings such as some unusual association between different research variables. To gain additional insight into these results, the researcher would conduct a qualitative phase (such as detailed interviews with the adolescents) in order explain the unexpected results. Explanatory mixed method design provides a two-phase structure that is easy to implement because both phases are independent. Only one type of data is collected at a time. Due to its strong emphasis on the quantitative phase, this design is often the preferred choice of researchers. The research results can be compiled and published independently. This design is one of the emergent research designs in which the second phase of the research is built on the learning gained in the first phase of the research.

Despite its simplicity, the explanatory mixed method design has many associated challenges. This design is time consuming and implementing the qualitative phase can take considerably more time than implementing the quantitative phase. Though the qualitative phase involves few participants, the collection and analysis of qualitative data can be a lengthy process. To conduct a qualitative phase, normally an approval of institutional review board is needed. This approval can be difficult to obtain. This is because the design of the second phase is dependent on the findings of the first quantitative phase. Therefore, researcher cannot specify how participants will be selected for the second phase. One strategy to deal with this issue is that the researcher can provide a tentative design of the qualitative phase to the institutional review board and inform participants of the possibility of their participation in the second phase of the research. The researcher must decide which results of the quantitative phase would be explained further. This is difficult until the quantitative phase is completed, but the researcher may consider the significant results and strong predictors while planning the study. The selection of the sample population for the qualitative phase is another important decision. The researcher needs to come up with some criterion for this decision. For example, the researcher may use the same groups used in comparisons during the quantitative phase in order to provide the best interpretations.

### **Why use Sequential Explanatory Design?**

Since the overall objective of sequential explanatory design is to use the qualitative phase to explain some unexpected quantitative results (Creswell et al., 2003), this method works well in situations where the

## Mixed Methods Research Design

researcher needs qualitative data to gain additional insight into quantitative results (whether significant or insignificant) that are surprising or outliers (Morse, 2009). This research design can also be used when group results are to be compared or when the quantitative results are to be used for purposeful sampling in the qualitative phase (Creswell, Plano Clark, et al., 2003; Morgan, 1998; Tashakkori & Teddlie, 1998).

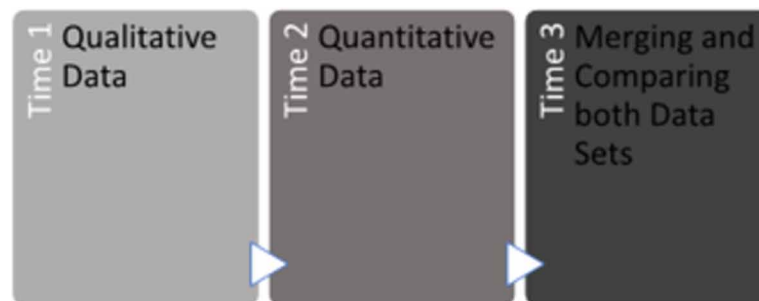
### Designing a Sequential Explanatory Study

Also called the sequential model (Tashakkori & Teddlie, 1998), sequential triangulation (Morse, 1991), iteration design (Greene, 2007), and qualitative follow-up approach (Morgan, 1998), this is the most straight-forward mixed method design. It is a two-phase interactive research design that researchers use to identify cause-and-effect-relationships. The first phase is the quantitative phase and in the second qualitative phase, researchers analyzes specific results of the quantitative data to get their in-depth explanation. It is due to this focus on explaining results that we call this method the explanatory mixed method design.

In the first step of a sequential explanatory design, the researcher collects and analyzes quantitative data. In the second step, the researcher identifies specific results of quantitative analysis that warrant additional explanation. The researcher uses these results as a basis to develop or refine the qualitative research questions and decide data collection procedures. In the third step, the researcher collects and analyzes the qualitative data. In the fourth and final step, the researcher interprets the qualitative analysis results to understand how these results could provide additional insight into the results of quantitative analysis (Ivankova, Creswell, & Stick, 2006).

Figure 5 below outlines the steps in designing a Sequential study.

Figure 5. Steps in Designing a Sequential Explanatory Study



### Sequential Exploratory Design

This research design is a two-phase sequential research design that starts with a qualitative phase. In this phase, a researcher explores a topic. The researcher uses analysis of the results of this qualitative phase to build the second quantitative phase to test or generalize the initial exploratory results. In many instances, the researcher uses results of the qualitative phase to develop a research instrument that is used for data collection in the quantitative phase. For this reason, sequential exploratory design is also called instrument development design (Creswell, Fetters, & Ivankova, 2004) or the quantitative follow-

up design (Morgan, 1998). In contrast to the sequential explanatory design, this research design begins with and lays great emphasis on the qualitative phase as shown in Figure 6. Once the quantitative phase is completed, the researcher interprets the results to see if they generalize or provide additional insight into the exploratory findings of the qualitative phase. For example, a researcher may conduct a qualitative phase to identify the possible consequences for adolescents who quit drugs. The results of the qualitative phase could provide different research variables that the researcher could use to develop a research instrument. The researcher could then use this research instrument to assess the overall frequency of these variables in a large sample of adolescents that quit drugs.

### **Why use Sequential Exploratory Design?**

The sequential exploratory design starts with a qualitative component. The qualitative component is more significant and has greater priority in formulating the research problem and purpose. The purpose of sequential exploratory design is to generalize the initial findings from this qualitative phase. Like the sequential explanatory design, the intention of this design is to help develop or inform the second, quantitative method (Greene et al., 1989). The premise is that such exploration may be needed due to unavailability of research instruments, unknown research variables, and lack of guiding research frameworks. Since this design places great emphasis on the qualitative phase, it is well suited for studies that explore a phenomenon (Creswell et al., 2003) or when the researcher needs to develop and test a new research instrument (Creswell, 1999; Creswell et al., 2004) or to identify additional unknown research variables. This design is also suitable when the researcher seeks to test an emergent theory or to explore, in depth, a phenomenon and its associated dimensions (Morgan, 1998).

The sequential exploratory design is most useful in studies where the qualitative exploratory results are to be generalized, assessed, or tested for their applicability to a sample and a population. This design is also practical when the researcher needs to develop a new instrument through exploration. In addition, this design helps the researcher in developing a classification or typology for testing or identifying unknown variables to study quantitatively. This may lead to the discovery of additional emergent research questions based on qualitative results that cannot be answered with qualitative data alone.

### **Designing a Sequential Exploratory Study**

There are four major steps of the exploratory mixed method design. In the first step, the researcher collects and analyzes qualitative data. In the second step, the researcher uses the results of qualitative analysis to develop the quantitative component (i.e. developing the quantitative research questions, developing the research instrument, and decide data collection procedures. The third step is to collect the quantitative data. In the fourth and final step, the researcher interprets the results to find out whether the results of quantitative analysis generalize or provide additional insights into the findings of qualitative analysis (Clark & Creswell, 2011). Figure 5 below outlines the steps in designing a Sequential Exploratory Design study.

### **The Embedded Design**

A popular design in the social sciences is to use quantitative and qualitative approaches in tandem and to embed one in the other to provide new insights or more refined thinking. These designs are called embedded or nested designs. They may be a variation of a convergent or sequential design. In this form

## Mixed Methods Research Design

Figure 6. Steps in designing a Sequential Exploratory Study



of integration, a dataset of secondary priority is embedded within a larger, primary design. An example is the collection of supplemental qualitative data about how participants are experiencing an intervention during an experimental trial. For example, mentioned previously is the study of student reading achievement and engagement after implementing a reading program. The researcher could decide to include weekly interviews with teachers during the experimental phase to discover the process being experienced by the teachers.

Alternatively, qualitative data collection may precede an experimental trial to inform development of procedures or follow an experimental trial to help explain the results of the trial. A prototype would be to conduct an intervention study and to embed qualitative data within the intervention procedures to understand how experimental participants experience the treatment. Qualitative data may be used prior to the intervention to inform strategies to best recruit individuals or to develop the intervention, during the experiment to examine the process being experienced by participants, or after the experiment to follow up and better understand the quantitative outcomes. For example, an experimental study of outcomes from an alcohol prevention program might be followed by individual interviews with participants from the experimental group to help determine why the program worked.

The embedded design combines the collection and analysis of both types of data (quantitative and qualitative) within a traditional research design. This traditional research design could either be a qualitative design (such as a case study) or quantitative (such as an experiment) (Caracelli & Greene, 1997; Greene, 2007). The traditional research design is called the primary design or primary research component and data collected is called the primary data. Either the quantitative or qualitative component can be the secondary (or supplemental) component. The collection and analysis of the secondary data set may occur before, during, and/or after the implementation of the data collection and analysis of primary research data. Both quantitative and qualitative components are implemented simultaneously. The secondary research component is embedded in the larger design of the study in order answer different research questions. Embedded mixed method research designs are suitable in cases where a single research component may not be enough to answer all the research questions (Creswell, Fetters, Plano Clark, & Morales, 2009).

One example of the embedded mixed methods design is a research study where a researcher is looking to develop peer-interventions to help adolescents develop strategies for resisting pressure to drink. In the first step, the researcher may start with a qualitative design (such as focus groups) to understand when adolescents feel pressure to drink and how they resist. Using results of this qualitative data analysis,



the researcher can develop an intervention and test it with a quantitative design (such as experiment) by using a student sample.

### **Why use Embedded Design?**

There are three different premises for use of the embedded design. First is that a single data set is not enough to answer all the research questions. Second, there may be different research questions to be answered. Third, each research question may need a different research component to be answered. A research study may be predominantly quantitative but may include some qualitative data that is needed to answer some secondary research questions. Researchers may embed qualitative data into experiment designs for a variety of reasons such as to improve research results (e.g., Donovan, Mills, Smith, Brindle, Jacoby, and Peters, 2002), examine the process of an intervention (e.g., Victor, Ross, & Axford, 2004), or to explain reactions to participation in an experiment (e.g., Evans & Hardy, 2002a, 2002b). Though the purpose of embedding qualitative data is tied to the primary purpose of the quantitative design, the qualitative data can be used to answer some questions other than the research questions sought-after by the quantitative design. This distinguishes embedded mixed method design from triangulation mixed method design. In triangulation mixed method design, the researcher uses both quantitative and qualitative methods to address a single research question.

### **Designing the Embedded Design Study**

The purpose of embedded design is to enhance the application of a traditional research design (quantitative or qualitative). As such, the assumptions of embedded design are guided by the primary research design. The secondary or supplemental method is subservient within the primary research methodology. For example, if the primary research design were quantitative, the assumptions of embedded mixed method design would be guided by the postpositivist approach. According to this approach, a) knowledge can best be gained through a search for regularities and causal relationships among components of the social world. b) regularities and causal relationships can best be discovered if there is a complete separation between the investigator and the subject of investigation, and c) this separation can be guaranteed using the scientific method.

Similarly, if the primary research design is qualitative, the assumptions of embedded mixed method design would be guided by the constructivist approach. According to this approach, a) all knowledge is constructed and all learning is a process of that construction, b) individuals construct knowledge as part of a community but each has his/her own invisible world view that he/she believes is the same as everyone else's, and c) knowledge is content dependent so it is important to situate learning in an authentic, relevant and realistic contexts. In either case, the supplemental method is subservient within the primary research methodology.

When thinking about the procedure of embedded design, one needs to decide when supplemental data should be collected and analyzed and what could be the possible reasons to include this supplemental data in the research. This additional data collection can occur before, during, or after the primary component of the study. This decision is guided by the purpose of the supplemental component in the overall larger design of the study (Creswell, 2009). As such, the embedded mixed method design can be a one-phase or two-phase design.

## **Mixed Methods Research Design**

In embedded design, a researcher can use either quantitative data or qualitative data as supplemental data. The most common embedded design is the one in which qualitative data is used as supplemental data. The implementation of this type of embedded design involves some important steps (Guest, Namey, & Mitchell, 2012). In the first step, the researcher designs the overall quantitative design and decides the reasons for including the supplemental data i.e. qualitative data. In the second step, the researcher collects and analyzes qualitative data to enhance the quantitative design. In the third step, the researcher analyzes the quantitative data. In the fourth and final step, the researcher interprets how the results of qualitative data analysis can help enhance the quantitative design and or understanding of the results of the quantitative design (Creswell, 2013).

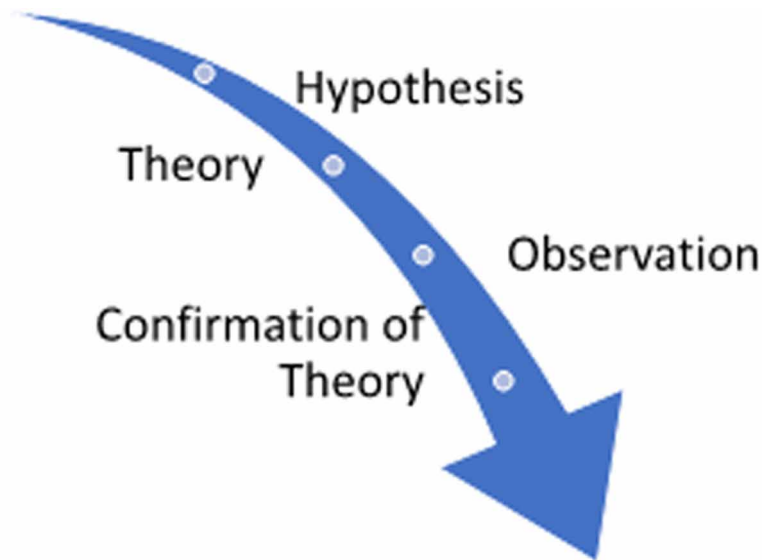
Researchers gain many advantages by using embedded design. Researchers can save time and resources because one research component (i.e. quantitative) is given priority. By using supplemental data, the larger design of the research can be improved. Since different research components used in embedded mixed methods address different research questions, a team approach can work. Each member of a team, depending on their skills and expertise, can focus their work on a research question. Such focus also means that the results of both research components (i.e. quantitative and qualitative) can be kept and published independently. This design is particularly attractive for donor-agencies funding different research projects. Those donor-agencies unfamiliar with mixed methods research may find this design useful because of its primary focus on a traditional design that could be either quantitative or qualitative (Teddlie & Tashakkori, 2011).

Embedded design also has many associated challenges. Besides expertise in mixed methods research, a researcher also needs expertise in one of the two traditional designs (i.e. quantitative and qualitative). It is necessary for the researcher to specify the purposes of collecting supplemental data as part of the large design of the research study. These purposes can be classified as primary and secondary purposes. For example, a researcher may include supplemental data to shape the intervention or to follow up on results of the experiment. The researcher must also decide the timing of supplemental data collection (i.e., before, during, after, or some combination). This decision should be guided by the purposes of collecting supplemental data that the researcher specified earlier. Since the two research components may be used to answer different research questions, integration of results can be difficult. Contrary to the parallel convergent design, embedded design does not merge the two different data sets to answer the same research questions (Teddlie & Tashakkori, 2011; Johnson & Onwuegbuzie, 2004). Figure 7 below outlines the steps in designing an Embedded design study.

## **CONCLUSION**

When conducting research, researchers need to follow a plan for how the study will unfold and the various steps taken from data collection through data analysis. The function of the design is to ensure that a blueprint is in place and that the researcher has collected enough data and analyzed the findings so that the initial research question(s) can be addressed. In other words, when designing research, one needs to ask: given this research question (or theory), what type of data will I need to collect in order to address the research objective? The chapter starts with a detailed description of what research design is, followed by an explanation of descriptive, explanatory and exploratory research questions. This determines what type of data will be collected.

Figure 7. Steps in designing an Embedded Design Study



This chapter describes the differences between research methods and designs and provides a rationale for research design. Strategies associated with quantitative and qualitative designs have been explained. In addition, a rationale for mixed methods research designs and sequencing of the data collection have been discussed. Finally, the four basic mixed methods research designs are described: Parallel Convergent, Sequential Explanatory, Sequential Exploratory, and Embedded complete with a description for selecting each type. In addition, the steps including implementation, weight of findings, and data integration are outlined.

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Section 4

# Research Design and Technology

## Chapter 18

# Developing a Research Method to Analyze Visual Literacy Based on Cross-Cultural Characteristics

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### ABSTRACT

*This chapter presents a new approach of a quantitative analysis used to research the understanding of visual literacy issues. The objective of the research is to find common patterns, opinions, and behaviors between different people regarding the use of visual communication and people's state of visual literacy, while also considering the possible cultural differences related. To explain visual literacy and its implications, the theoretical background about the visual literacy research field is presented first. Then, also within the section on background, the chapter presents the main concepts related to culture, and how it and visual literacy can be analyzed together to enable cross-cultural analysis. To conduct these cross-cultural analyses, this chapter proposes a new kind of quantitative questionnaire-based instrument that includes a section to measure the cultural characteristics of the individual and their level of literacy. This instrument proposal is the main result, since the research field of visual literacy lacks this kind of quantitative approach.*

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## 1. INTRODUCTION

The concept of “visual literacy” is not a brand-new term. Visual literacy as a term and a field of study was introduced in 1969 by the authors Fransecky & Debes (1972). They define, within their role steering the International Visual Literacy Association, visual literacy in the following way:

“a group of vision competencies a human being can develop by seeing and at the same time having and integrating other sensory experiences. The development of these competencies is fundamental to normal human learning. When developed, they enable a visually literate person to discriminate and interpret the visual actions, objects, and/or symbols, natural or man-made, that are [encountered] in [the] environment. Through the creative use of these competencies, [we are] able to communicate with others. Through the appreciative use of these competencies, [we are] able to comprehend and enjoy the masterworks of visual communications” (Fransecky & Debes, 1972; International Visual Literacy Association, 2003).

The fact that the individuals of the new generations have greater access to information does not imply that such access is relevant or significant. In order to achieve this, it is necessary to have an intentional intervention of the different educational agents in the different fields, who must ensure that this intervention is not done from an optics contrary to their culture (Hernández Serrano & González Sánchez, 2011).

Prensky (2001) discusses how digital “natives”, who grow and develop around new technologies, think differently than “digital emigrants” (those who come from a handwriting-based culture). The author argues that, while the minds of the migrants are linear, those of the natives can be considered hypertextual, which means that they can read in a discontinuous, global and interconnected way. The natives are capable of processing up to three different information screens simultaneously, and have multidimensional spatial-visual abilities for the processing of images and three-dimensional representations, mental maps or interactive figures, responding quickly to both expected and unexpected stimuli with very surprising selective attention dimensions. All of these notes on different kind of consumptions and productions of images, and different levels of visual literacy gathered in literature, support the main idea of this paper and the goals and research work presented in the following sections.

There are many approaches and theories in the literature that highlight the importance of using visual literacy and related aspects and competencies in education, communication, etc. Despite of that, the authors of this paper consider that this field of research lacks (at least partly) proper research methods and quantitative/qualitative approaches. This is the aim of this paper, to contribute to the visual literacy knowledge field by proposing a quantitative instrument that could help researchers to measure people’s understanding level and state of visual literacy, allowing them to compare this state among different people. The main result of this paper is the proposal of a questionnaire that: measures different aspects related to understanding and visual literacy and measures some cultural aspects of people. These cultural aspects in the questionnaire can be used as a lever to establish different categories of visual literacy depending on the people that respond, or to investigate about cultural factors and their relationship to visual communication or other visual aspects (that could help to support many of these theoretical approaches detected in the literature).

The paper is structured as follows: the second section presents the background that supports this research work. The third section presents the different hypotheses and goals (both specific and general ones) for this research and future research based on the experiment proposed in this paper. The fourth section outlines the methodology used to build the research. The fifth section shows the results achieved. Finally, the last section (sixth) finalizes the paper with some conclusions and future work.

## 2. BACKGROUND

When talking about cross-culture differences, cross-cultural analysis, etc., the first issue should be to define the term *culture*.

According to the work of (Rizo García & Romeu Aldaya, 2006), culture is a term that has been investigated in many moments throughout history, and which has varied according to the interpretation and social changes occurred over time. In this work, these authors present approaches for elementary definitions, which, despite their conceptual ambiguity, manage to define and situate the term in a more understandable way. This kind of understandable definitions are what the authors of this paper use as the basis for their research.

In this sense, authors Rizo García and Romeu Aldaya (2006) handle three definitions of culture:

1. In a first definition, they talk about the relationships that arise between people with different “organizing principles, different places in which individuals or groups are positioned and recognized” (González, 1987). This author, González, through his definition, brings culture into the field of identity.
2. In the second definition, they include a more political vision of the term: relating culture with Cultural Studies that also allow us to find differences in the identities of the subjects.
3. To finish the definitions, they add the definition from (Comaroff & Comaroff, 1992), which presents culture as a structure in which the social order is reproduced and transformed.

Other authors, like Geert Hofstede (Geert Hofstede, 2017) present culture as:

*Simply said, culture is how you were raised. It developed while you grew up. With a computer metaphor, culture is the software of our minds. We need shared software in order to communicate. So, culture is about what we share with those around us.*

All of these definitions presented could help the reader to understand what culture is. In this case, the authors prefer this last one by Hofstede, since it provides a more accurate and suitable example for the research presented in this paper.

Once the concept of culture is defined, it is time to introduce its implications for the human life and environment.

Regarding culture and its acquisition, given the importance of the cognitive (mental) and communicative (relational) character of culture, it could be stated that acquiring culture depends to a great extent on what we can learn (Bodley, 1994) through social relations, and to the communication thanks to what we (humans) share, either generated by us or not. Regarding the concept of culture generated or not by people, the authors bear in mind the two dimensions of Geertz (Geertz, 1987). These two dimensions are tradition - what is given to us - and innovation - what is built or generated by us-. The tools that people use to acquire that culture paradoxically serve to people to bind to their peers, just because they share the culture between them (García Castaño & Pulido Moyano, 1992). When the attempt is made to find the differences of interpretation that arise using the same message in two different cultures with the same possibilities of literacy, and which coexist in the same time and often in the same place, as is the case in this research work, it is possible to include the concept of culture proposed by Freud (1970, 2012). Freud recognizes culture as a “unitary regulation of life in common”. This, together with the

concepts of ego (the individual) and superego (the collective), introduces an important item in defining culture, such as the relationship of the individual with society: a relationship that also arises through the difference of ideas, traditions and customs in a social class, over time, etc.

Regarding the measurement of the cultural aspects of people to establish cross-cultural differences, it is possible to understand cross-cultural as “the differences of interpretation that arise from the same message in two literate cultures.” Cross-cultural differences explain how people could have characteristic ideas, traditions and customs, that are not shared either among social classes or across time (Spanish Royal Academy of Language, 2017). According to the literature, cross-cultural differences can be measured using the following dimensions (a reproduction of the definitions that author provided in 2011) proposed by (Geert Hofstede, 2011):

1. **Power Distance Index (PDI):** The power distance index is defined as “the extent to which the less powerful members of organizations and institutions (like family) accept and expect that power is distributed unequally.” In this dimension, inequality in power is perceived by the followers, or the lower level. A higher degree of the index indicates that hierarchy is clearly established and executed in society, without doubt or reason. A lower degree of the index signifies that people question authority and attempt to distribute power.
2. **Individualism vs. Collectivism (IDV):** This index explores the “degree to which people in a society are integrated into groups.” Individualistic societies have loose ties that often only relate an individual to his/her immediate family. They emphasize the “I” versus the “we.” Its counterpart, collectivism, describes a society in which tightly-integrated relationships tie extended families and others into in-groups. These in-groups are laced with undoubted loyalty, and they support each other when a conflict with another in-group arises.
3. **Uncertainty Avoidance Index (UAI):** The uncertainty avoidance index is defined as “a society’s tolerance for ambiguity,” in which people embrace or avert an event containing something unexpected, unknown, or far from the status quo. Societies that score a high degree in this index opt for stiff codes of behavior, guidelines, laws, and generally rely on absolute Truth, or the belief that one single Truth dictates everything and people know what it is. A lower degree in this index shows more acceptance of differing thoughts/ideas. Society tends to impose fewer regulations, people are more used to ambiguity, and the environment is more free-flowing.
4. **Masculinity vs. Femininity (MAS):** In this dimension, masculinity is defined as “a preference in society for achievement, heroism, assertiveness and material rewards for success”. Its counterpart represents “a preference for cooperation, modesty, caring for the weak and quality of life.” Women in the respective societies tend to display different values. In feminine societies, they share modest and caring views equally with men. In more masculine societies, women are more emphatic and competitive, but notably less emphatic than the men. In other words, they still recognize a gap between male and female values. This dimension is frequently viewed as taboo in highly masculine societies.
5. **Long-Term Orientation vs. Short-Term Orientation (LTO):** This dimension associates the connection of the past with the present and future actions/challenges. A lower degree of this index (short-term) indicates that traditions are honored and kept, while steadfastness is valued. Societies with a high degree in this index (long-term) views adaptation and circumstantial, pragmatic problem-solving as a necessity. A poor country that is short-term oriented usually has little to no economic development, while long-term oriented countries continue to develop up to a point.

6. **Indulgence vs. Restraint (IND):** This dimension is essentially a measure of happiness; whether or not simple joys are fulfilled. Indulgence is defined as “a society that allows relatively free gratification of basic and natural human desires related to enjoying life and having fun.” Its counterpart is defined as “a society that controls gratification of needs and regulates it by means of strict social norms.” Indulgent societies believe themselves to be in control of their own life and emotions; restrained societies believe other factors dictate their life and emotions.

On the other hand, literacy is the teaching of reading and writing a language to a person. “In 1968 the IVLA (International Visual Literacy Association) was founded when a group of people interested in various aspects of visuals in education and communication met to plan a conference on visual literacy” (García-Sánchez, Therón, & Isla, 2014). This moment (1968) marked the first time that the term visual literacy appeared in the theoretical panorama, but the real beginning of the reflection on this topic can be traced back to the appearance of photography at the end of the 19<sup>th</sup> century. Just as it happened with the appearance of the printing press in the 15<sup>th</sup> century (written language begins to be accessible to the public, new readers begin to grow and so does the number of people who can read and write), people that “prosume” -a term later coined by (McLuhan & Nevitt, 1972)- began to appear. These actors (subjects) begin to produce images thanks to the development of increasingly accessible technologies, and finally the photograph passes from the silver frame to the digital frame (Gómez Cruz, 2012), finally coming to be that “everybody today with a mobile phone with a built-in camera automatically becomes a photographer” (Manovich, 2015).

The communicational changes produced new languages and codes that influenced the beginning of Knowledge Society Information (Expósito Ortiz, 2013). Thanks to the growth generated by the information society and the technologies, currently almost everyone handles images in their day-to-day lives (Manovich, 2015). It is possible to find images included in the media, social networks or our own phones.

Since Apple introduced the iPhone in 2007, which included a 2-megapixel camera, mobile devices have become increasingly intelligent (thus being called smartphones). Thanks to them, people have been including in their habits of communication and consumption some tasks that were not previously a part of their routine, such as the generation of images or videos.

It is possible to talk about the construction of a visual language (which, like verbal language, will be considered at some point an evolutionary leap) and to affirm that it has been developing since the beginning of human history (Dondis, 1974), but it becomes democratic the moment that anyone can generate codes, leaving aside their graphomotor skills or their sociocultural or socioeconomic level.

Therefore, if there is a visual language, it is also assumed that communication exists.

Intentionally, someone elaborates and diffuses a message to make it possible that another person, depending on their level of visual literacy, is able to receive and interpret it (Felbo, 2017; Hug, 2013).

In order for this communication to take place, already known concepts come into play, thanks to verbal communication: “transmitter – message – receiver” (Watzlawick & Watzlawick, 1976). In the case of visual communication, according to Dondis (1974), when generating a visual message we use the basic elements of visual communication, but also shared perceptual mechanisms. With the latter, the author refers to the existence of visual perception, which is a mechanical operation of the human body that unites us, but which can sometimes separate us because of the message decoding process. Message decoding depends on some kind of extension in the interpretation of what we observe, which includes subjectivity. The subjectivity of someone who recounts something includes infinite formulas to tell something. The fact of recounting is what shows that there is a visual language, but at this point

some questions might be posed: are there differences and similarities in the ways of recounting things related to the cultural differences of the communicator? Can we all read visual messages in the same way? Who is visually literate? What is the quality regarding visual literacy? Are there cultural differences in this quality? In order to answer these questions, the authors of this article propose the generation of a quantitative instrument (and some kind of basis for a future qualitative instrument) to measure visual literacy, visual communication understanding and other related issues. This measurement will occur using opinions from people and using concepts like self-perceived understanding of visual communication.

### **3. HYPOTHESES AND GOALS**

This section presents the different research hypotheses proposed by the authors and the different goals pursued in this research (general goals, and specific ones). It is worth to note that all of these hypotheses and goals are not only proposed for this paper, but also as the desired goals to be accomplished by using the results of this research and the instrument proposed.

#### **3.1 Research Hypothesis**

The main hypothesis is that it is possible to propose a method to research if there are cross-cultural differences between different people regarding visual literacy and the understanding in visual communication.

Understanding cross-cultural as previously explained in the background section, the specific hypotheses to conduct a study based on this proposal would be:

**H1:** There are differences in people's visual literacy depending on gender.

**H2:** There are differences in people's visual literacy depending on their age or generation (Baby Boom, Z, X, Y).

**H3:** There are differences in visual literacy depending on the cultural provenience or ethnic aspects of the people. As authors like (Jones & Healing, 2010; Jones, Ramanau, Cross, & Healing, 2010) present, there are some cultural changes in the information usage and practice in newer generations like the "Google generation".

#### **3.2 Goals**

##### **3.2.1 General Goals**

- To design a measurement instrument to assess an individual's level of visual literacy, with specific attention to the cross-cultural aspects.
- To define the proper analysis required for this kind of instrument (goal for future analysis based on this proposal). The main analysis techniques that could be applied are based on structural equation models (SEM), such as those used by the authors on previous research works (Sánchez Prieto, Olmos Migueláñez, & García-Peñalvo, 2017; Sánchez-Prieto, Olmos-Migueláñez, & García-Peñalvo, 2017).
- To validate the instrument (goal for future analysis based on this proposal).

### 3.2.2 Specific Goals

- To establish a quantitative method that allows researchers to find differences regarding the consumption, production and reading of images in a cross-cultural way (goal for this paper).
- Test if, apart from the cultural differences, there are differences regarding the individuals' age or other personal details (goal for future research based on this paper).

## 4. METHODOLOGY

In order to measure the different variables presented in the survey, the authors have designed an instrument divided in three main sections: the first section asks for the identification data of the person that is filling out the questionnaire (age, gender, tendencies using the Internet, apps that use images or audiovisual contents as part of their business core, etc.). The second section tries to gather information about different aspects related to visual literacy (use of images, visual representations, *visual thinking*, etc.). The third and last section of the survey tries to get information about the cultural aspects of the participant, in this case using the cultural dimensions and questions presented in the methods section.

Specifically, the first part is composed by six questions that ask about gender, age, country of origin, the educational level of the individual, or how many hours the respondent uses the Internet for, or which apps they use (the apps proposed in the questionnaire are selected because they include image or video as part of their main features or functionalities and could serve for visual communication).

The second and third parts are made up of a set of items formulated in a five-point Likert-type scale. The range of values varies from 1 to 5 (1= Totally disagree; 2= Disagree; 3= neither agree nor disagree; 4= Agree; 5= Totally agree). Regarding the questions that compose the questionnaire, it should be outlined that the questions in general will not be mandatory.

The second part is composed by 62 items grouped in seven different constructs related to visual literacy and elements of visual communication. As previously explained, not many examples of how to measure visual literacy understanding and state can be found in the literature, so authors have defined their own instrument. The items and constructs proposed are based on the work by (Dondis, 1974). The authors proposed several practical exercises and experiments to evaluate people's visual literacy level but based on a qualitative approach. For this paper, the authors have adapted some parts of the exercises proposed, but using a quantitative approach suitable to be reproduced in future research.

In the third part of the questionnaire there are 30 items that belong to the six main constructs about cultural differences proposed by (Geert Hofstede, 2011). These items are taken directly or adapted from the work of Hofstede and many other authors like (Obeidat et al., 2016; Sánchez-Prieto, Huang, Teo, Olmos-Migueláñez, & García-Peñalvo, 2017; Sánchez-Prieto, Olmos-Migueláñez, & García-Peñalvo, 2016; Tarhini, 2016; Tarhini, Elyas, Akour, & Al-Salti, 2016; Tarhini, Hone, & Liu, 2015; Tarhini, Teo, & Tarhini, 2016).

Considering the three parts, the questionnaire is composed by 88 questions. Table 1 summarizes all the constructs and items that appear in the questionnaire (excluding the identification variables).

Regarding other methodological aspects of the experiment to be run using the questionnaire proposed, the population of the experiments should be controlled. In depth, to find cross-cultural differences using the questionnaire proposed, the experiments should be developed using populations with similar features (age for example) in different cultural contexts and countries. For that reasons, the authors propose to

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run the same tests in different cities, countries or different schools, universities, etc. to similar groups of people (students, old people, young people, etc.).

*Table 1. Distribution of the number of items per construct*

<b>Construct</b>	<b>Number of Items</b>
Character and content (CC)	5
Composition (COM)	9
Basic elements of visual communication (EVC)	9
The anatomy of the visual message (AVM)	10
Contrast Dynamics (CD)	9
Visual techniques: communication strategies (VTCS)	5
Synthesis of visual style (SVS)	5
Individualism vs. collectivism (IDV)	5
Power distance index (PDI)	4
Uncertainty avoidance index (UAI)	5
Indulgence vs. restraint (IND)	4
Long-term orientation vs. short-term orientation (LTO)	5
Masculinity vs. femininity (MAS)	7

As a final remark, regarding the methodology and its implications, it should be outlined that, according to several studies (Baartman & Ruijs, 2011), the level of self-perceived competence stated by a person is similar to the actual level of competence demonstrated by that person. Assuming that, in this research the people that will respond the proposed questionnaire are self-evaluating their understanding related to visual literacy issues, it could be stated that this self-evaluation is similar to their real competence level.

## **5. RESULTS**

The main result of this research is the instrument proposed for the assessment of the level of visual literacy in people of different ages and cultures.

So, taking into account the considerations presented in the previous sections, the questionnaire proposed is displayed across different tables (Tables 2, 3 and 4).

## **6. CONCLUSION AND FUTURE STEPS**

This paper presents a new approach of a quantitative analysis to be used in the research about the understanding of visual literacy and visual communication issues. The goal of this new approach is to find common patterns, opinions and behaviors between different people regarding the usage of visual communication and people's level of visual literacy, while also considering possible cultural differences

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related to it. the theoretical background about the visual literacy research field is presented in the first place. Also, regarding the background of this research, the paper presents the main concepts related to culture and how culture and visual literacy can be related or analyzed together to enable cross-cultural comparisons and analysis. To conduct these cross-cultural analyses, this paper proposes a new kind of quantitative questionnaire-based instrument that includes a section that measures the cultural characteristics of the individual (the participant) and their level of literacy regarding visual communication. This instrument proposal is the main result of this research, since the research field of visual literacy lacks this kind of quantitative approaches.

*Table 2. Personal information requested in the first part of the questionnaire*

<b>Information Required: Gender</b>	
Text of the question	Gender
Possible responses (chose only one)	Male
	Female
	Prefer not to answer
<b>Information Required: Age</b>	
Text of the question	Age
Possible responses	Open answer
<b>Information Required: Nationality</b>	
Text of the question	Country
Possible responses	Open answer
<b>Information Required: Educational Level</b>	
Text of the question	What is your educational level?
Possible responses (chose only one)	Less than compulsory secondary education
	Compulsory secondary education
	Higher education (vocational)
	Higher education (undergraduate)
	Higher education (graduate)
<b>Information Required: Consumption of the Internet per Day (in Hours)</b>	
Text of the question	How many hours a day do you use the Internet (it includes messaging apps, social networks, email, etc.)?
Possible responses (chose only one)	None
	Less than 1 hour
	1-2 hours
	2-4 hours
	4-6 hours
	More than 6 hours

*continues on following page*



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*Table 2. Continued*

<b>Information Required: Kind of Apps Used by the Respondent of the Questionnaire</b>	
Text of the question	Do you use the following applications (mark all that proceed)?
Possible responses (chose all that apply)	Audiovisual content apps based on subscription (Netflix, HBO, Amazon Prime Video, etc.)
	Blogs and forums (Tumblr, Baidu Tieba, etc.)
	Dating apps (Tinder, Badoo, eHarmony, Happn, Match, Dating Direct, etc.)
	Messaging apps (Whatsapp, WeChat, Facebook Messenger, QQ / Qzone, Telegram, Line, Signal, Google Hangouts, etc.)
	Online photo libraries (Google Photos, Apple Photos, iOS Photos, iCloud, etc.)
	Professional social networks (Linkedin, Slideshare, Xing, etc.)
	Social networks (Facebook, Twitter, Sina Weibo, etc.)
	Social networks for designers and artists (Behance, DeviantArt, Dribbble, Domestika, etc.)
	Video apps and social networks (Youtube, Vimeo, etc.)
	Videomeeting apps (Skype, Google Hangouts, Apple Facetime, Viber, Google Hangouts, Google Duo, Zoom, etc.)
	Videostreaming apps (Youtube Live, Twitch, Facebook Live, Periscope, etc.)
	Visual social networks (Snapchat, Pinterest, Instagram, etc.)
	Any other similar to some of the previous ones (type the name) _____

*Table 3. Questions about visual literacy and visual aspects in the second part of the questionnaire*

<b>Construct: Character and Content</b>	
Definition: About the ability to decode a visual message (Dondis, 1974)	
<b>CC1</b>	When I have to represent something, I first visualize its image in my mind
<b>CC2</b>	When I see an emoji (emoticon) I am able to understand what the emitter of that message wants to tell me
<b>CC3</b>	When I see a GIF animation I am able to understand what the emitter of that message wants to tell me
<b>CC4</b>	When I see an Internet meme (image) I am able to understand what the emitter of that message wants to tell me
<b>CC5</b>	I can find something in a space, thanks to the previous spatial memory I have of it
<b>Construct: Composition</b>	
Definition: About the relation (ordering) of lines, colors, contours, directions, textures, scales, movements and dimensions that thanks to the tone, the light, give meaning to the visual message. Knowing how to use these perceptual resources “educates our compositional ability and allows us to use syntactic criteria for those who begin to learn visual literacy.” To arrange these elements in a plane is known as compose (Dondis, 1974).	
<b>COM1</b>	When I am watching an image, I am able to perceive the inclination of the motif, and sometimes I recognize myself inclining the head to see it totally horizontal
<b>COM2</b>	When I look at an image I need to find the main visual motif supported by (or aligned with) the frame (axis) of the image, this makes it easier for me to find interesting what I see
<b>COM3</b>	When I get a paper sheet, the first thing I look at is the center of the paper, then the bottom and then I set out to see/read
<b>COM4</b>	At some moment, I have looked an image and I do not know why I have focused something in the first place
<b>COM5</b>	When I see an image or a visual representation, I watch it from left to right
<b>COM6</b>	When you take a photo with your mobile phone or camera, you use the “grid” feature of the camera to organize what you are seeing
<b>COM7</b>	When I see similar figures in an image, I tend to group them in my mind and consider them as a set.

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*Table 3. Continued*

<b>COM8</b>	When I see a monochromatic image (black and white, etc.) I feel some kind disturbed if there is something different (a colored object in a black and white image, etc.)
<b>COM9</b>	I tend to find images or shapes in the clouds
<b>Construct: Basic Elements of Visual Communication</b>	
Definition: The basic elements of visual communication are: point, line, contour, direction, tone, color, texture, dimension, scale and movement. By joining them we produce the visual information that forms our visual message (Dondis, 1974).	
<b>EVC1</b>	When I look at a landscape I recognize in it what is far and what is near and I am aware of its size difference
<b>EVC2</b>	I have occasionally discovered when approaching an image on any screen that is composed of small dots
<b>EVC3</b>	I have ever seen an image of the Eiffel Tower and in it I have been able to see lines that make up a triangular outline
<b>EVC4</b>	When I look at a photograph I am able to perceive whether it is taken at night, during the day or in an interior because I see a difference of clarity or darkness
<b>EVC5</b>	I am able to recognize that an element has a shadow and see where it is headed
<b>EVC6</b>	I am aware that I can only take photos when there is light
<b>EVC7</b>	When I see a color photograph and the same in black and white, I find differences in the information received
<b>EVC8</b>	When I see a photo of a cactus I find myself thinking about the sensation of the skewers pricking me
<b>EVC9</b>	Sometimes I have seen something in photos that I later saw in reality and I was surprised by its size
<b>Construct: The Anatomy of the Visual Message</b>	
Definition: People express and receive visual messages, people presume, and people have different levels regarding the attainment of information: representationally, abstractly and symbolically. All can exist in the same image. Sight is the only thing needed to understand visually, as with speech, people do not need to be cultured to use language (Dondis, 1974).	
<b>AVM1</b>	I am able to transmit a message visually without using language
<b>AVM2</b>	When I see an image, I can find messages that make me feel
<b>AVM3</b>	I can see the sun, a drawing of the sun and a painting of the sun and understand that the three are the same concept
<b>AVM4</b>	I am able to find the toilets in the airport of any country, whatever it is the written language
<b>AVM5</b>	I understand that not all the symbols used by my peers, can be understood by other people
<b>AVM6</b>	I think that "a picture is worth a thousand words"
<b>AVM7</b>	Based on my experience, when I see a photograph of snow I know what kind of element is, its composition, its different states and other details (possible temperature, etc.)
<b>AVM8</b>	All the profile photos I have in social networks present the best-looking version of me
<b>AVM9</b>	I take more than 10 photos per week
<b>AVM10</b>	I find elegance in some images thanks to the content they use
<b>Construct: Contrast Dynamics</b>	
Definition: To be able to express visually people have to take into account that a visual message is composed of two factors: meaning and message. In order to construct the message people must know techniques that support the meaning of the message we want to convey. Contrast is one of the most important techniques for controlling the message. It is the process of visual articulation, a force to create a coherent whole. Contrast intensifies meaning and simplifies communication. Just as light (tone) allows people to see and is one of the basic elements of visual communication, contrast is also important. Without contrast people would not be able to distinguish the characteristics of what surrounds us, if we saw through a veil of gray light, no motive would have characteristics already seen as texture, contours... (Dondis, 1974)	
<b>CD1</b>	I am able to understand a contour although there is a missing part of the line that draws it
<b>CD2</b>	Sometimes, when retouching my photos (even automatically or simply including a filter) I like them more than at the beginning
<b>CD3</b>	I can recognize that a series of elements harmonize in a space
<b>CD4</b>	On occasion, having seen the same thing as other people, it means a different thing to me than it does for the others

*continues on following page*

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*Table 3. Continued*

<b>CD5</b>	If I see a balance that is loaded on both sides, and the load on one side is bigger than the other, I say that side weighs more
<b>CD6</b>	When I have to work on a document, I like to have the sheet organized to be able to see the content better
<b>CD7</b>	The images where there are lights and shadows draw my attention because of their mystery
<b>CD8</b>	Sometimes I find the proportions between several elements of some image exaggerated
<b>CD9</b>	In some of the images I have consumed in my life, I have recognized opposite concepts, such as war and peace, faced
<b>Construct: Visual Techniques: Communication Strategies</b>	
Definition: Content and form are basic and irreducible components of the expression media (music, dance, prose, art, photo...). Content is the message, which is expressed directly or indirectly. The form, the final result of the message, lies in the interaction of pairs of opposites, of polarities: first in forces of content (message and meaning) and form (design, medium and ordering); and second in the reciprocal effect of the articulator (designer, artist, craftsman) and receiver (audience). In all cases, the first and second go together. The message and method for expressing it depend greatly on the understanding and ability to use visual techniques: the visual composition tools. Visual techniques are not exactly choices to construct or analyze everything we see. Some of them may be: equilibrium-instability, symmetry-asymmetry, regularity-irregularity, simplicity-complexity, unity-fragmentation, economy-profusion, reticence-exaggeration, predictability-spontaneity, activity-passivity, subtlety-boldness, variation, realism-distortion, flat-deep, singularity-juxtaposition, sequence-randomness, acuity-diffusivity, continuity-episodicity (Dondis, 1974).	
<b>VTCS1</b>	When I set out to shoot a photograph, I reflect to try to convey a message through the resulting image
<b>VTCS2</b>	When I take a photograph, I am aware that someone is going to see it and interpret it
<b>VTCS3</b>	When I take a photograph, I act by intuition
<b>VTCS4</b>	When I take a photograph, I try to find positions that make the image somewhat different from the others
<b>VTCS5</b>	Sometimes I find in the advertising pictures characteristics that make me want to consume something specifically
<b>Construct: Synthesis of Visual Style</b>	
Definition: The style is the visual synthesis of all elements, techniques, syntax, instigation, expression and basic purpose. The style becomes a category of visual expression, which depends on culture. Therefore, it is an aspect that implies a consensus accepted by those who share it. The style influences the artistic expression and represents individuals that fall within a common characteristics (Dondis, 1974).	
<b>SVS1</b>	I am able to find within some animated films similarities in their style characteristics
<b>SVS2</b>	In some of the photographs I see on Instagram (or other social network based on images), I find repeated elements and that makes me think that some people copy others
<b>SVS3</b>	When I see a photograph, and like it, I try to repeat it somehow
<b>SVS4</b>	I am able to recognize a company thanks to its advertising without having to see the brand
<b>SVS5</b>	When expressing myself visually I find points in common with my peers

*Table 4. Cultural information and dimensions asked in the third part of the questionnaire*

<b>Construct: Individualism vs. Collectivism (IDV)</b>	
Definition: The extent to which individuals are integrated into groups (Tarhini, 2016)	
<b>IDV1</b>	Individuals should sacrifice self-interest for the group interest that they belong to.
<b>IDV2</b>	Individuals should stick with the group even with difficulties.
<b>IDV3</b>	Group interest/welfare is more important than individual interest
<b>IDV4</b>	Group success is more important than individual success.
<b>IDV5</b>	Being accepted as a member of a group is more important than having autonomy and independence.

*continues on following page*

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*Table 4. Continued*

<b>Construct: Power Distance Index (PDI)</b>	
Definition: The extent to which individuals expect and accept differences in power between different people. Questions partially adapted from adapted from (Tarhini, 2016)	
<b>PDI1</b>	People should make the most decisions by consulting/discussing with administrators/superiors
<b>PDI2</b>	People should have social interactions with administrators/superiors.
<b>PDI3</b>	Administrators/superiors should use authority and power when dealing with people
<b>PDI4</b>	People should agree with administrators/superiors' decisions.
<b>Construct: Uncertainty Avoidance Index (UAI)</b>	
Definition: The extent to which ambiguities and uncertainties are tolerated. Questions partially adapted from adapted from (Tarhini, 2016)	
<b>UAI1</b>	Specific rules or regulations are important to me.
<b>UAI2</b>	Detailed requirements are important to me.
<b>UAI3</b>	Detailed instructions are important to me.
<b>UAI4</b>	Standardized operating procedures are helpful so that I can follow suit.
<b>UAI5</b>	The best is to closely follow requirements, instructions and procedures.
<b>Construct: Indulgence vs. Restraint (IND)</b>	
Definition: The extent to which people try to control their desires and impulses, based on the way they were raised (Hofstede, 2011)	
<b>IND1</b>	Overall I consider myself to be a very happy person.
<b>IND2</b>	I have complete free choice over my life.
<b>IND3</b>	Leisure time is a very important part in my life.
<b>IND4</b>	Wellbeing is very important to me.
<b>Construct: Long-Term Orientation vs. Short-Term Orientation (LTO)</b>	
Definition: The extent related to the choice of focus for people's efforts: the future or the present and past (Hofstede, 2011). Questions partially adapted from (Obeidat et al., 2016)	
<b>LTO1</b>	Respect for tradition is important to me
<b>LTO2</b>	The thrift is important to me
<b>LTO3</b>	What is good and evil depends upon the circumstances
<b>LTO4</b>	The success and failure in life depends on luck
<b>LTO5</b>	The family life must be driven by shared tasks
<b>Construct: Masculinity vs. Femininity (MAS)</b>	
Definition: The extent of division of emotional roles between women and men. Adapted from (Hofstede, 2011)	
<b>MAS1</b>	In my environment, the women work
<b>MAS2</b>	In my environment, the men are kind and gentle
<b>MAS3</b>	In my environment, men know how to balance family and work
<b>MAS4</b>	In my environment, women know how to balance family and work
<b>MAS5</b>	When someone in my environment needs help, because their conditions put him/her in a worse position than mine, I understand and worry about him
<b>MAS6</b>	I think there should be more women commanding companies or governments
<b>MAS7</b>	Girls cry, boys don't; boys should fight back, girls shouldn't fight

As future work based in this research, the authors plan:

- To validate this instrument by asking experts.
- To propose new goals and hypotheses based on the feedback provided by the experts.
- To validate the resulting instrument in a statistical way.
- To use the instrument to run an experiment in several countries and cultural contexts to study visual literacy and its cross-cultural issues.
- To propose other instruments and experiments based on qualitative approaches to evaluate how people express themselves using visual communication and visual literacy competences. Also, these quantitative approaches would serve to find out what are the keys and determinants that produce differences in the level of visual literacy, depending on the variables identified in the research hypotheses presented in this paper.

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# Chapter 19

## Knowledge Visualization for Research Design: The Case of the Idea Puzzle Software at the University of Auckland

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### **ABSTRACT**

*This chapter presents a case of information and communication technology use in doctoral research processes. In particular, it presents the use of the Idea Puzzle software as a knowledge visualization tool for research design at the University of Auckland. The chapter begins with a review of previous contributions on knowledge visualization and research design. It then presents the Idea Puzzle software and its application at the University of Auckland. In addition, the chapter discusses the results of a large-scale survey conducted on the Idea Puzzle software in 71 higher education institutions as well as its first usability testing at the University of Auckland. The chapter concludes that the Idea Puzzle software stimulates visual integrative thinking for coherent research design in the light of Philosophy of Science.*

### **INTRODUCTION**

This chapter describes a knowledge visualisation tool – the Idea Puzzle software – for the overall design of a research project. The Idea Puzzle framework was created by the first author in 2007, in response to doctoral candidates' scepticism that they could share the same course on research design despite their heterogenous disciplinary background. The tool is based on Philosophy of Science to allow a visual overview of a research project beyond restricted notions of research design as method or fieldwork. Between 2007 and 2017, the first author presented the tool in 231 seminars, having received 1004 responses to

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an online anonymous feedback questionnaire. In 2009, the first software version of the tool was made available online, being licensed to higher education institutions (HEIs) since 2012. In 2016, the Academy of Management Learning and Education (4.235 5-Year Impact Factor) considered the Idea Puzzle software “a very useful tool for research across a multitude of disciplines, not only for PhD students as they learn about all of the elements of research project design, but also for reviewers and research project teams” (Parente & Ferro, 2016, p. 645). In 2017, the second author conducted the first usability testing of the Idea Puzzle software at the University of Auckland which subsequently led to the acquisition of its licence by the School of Graduate Studies. Congruent with such a chronological line, this chapter begins with a review of previous contributions on knowledge visualisation and research design. It then presents the Idea Puzzle software and its application at the University of Auckland. The chapter follows with an analysis of the issues identified in the large-scale survey and usability testing mentioned above, and concludes with solutions for the issues identified and suggestions for future research.

## **BACKGROUND**

In recent years, there has been an unprecedented interest in the visualisation of academic research processes (Meyer, Höllerer, Jancsary, & Leeuwen, 2013). Previous contributions have focused, among others, on the practical visualisation of scientific knowledge (Worren, Moore, & Elliott, 2002), on the complementarity between visual formats (Eppler, 2006), on the disciplinary background of visualisation research (Eppler & Burkhard, 2007), on the visualisation of conceptual frameworks (Leshem & Trafford, 2007), and on the pitfalls of visualisation (Bresciani & Eppler, 2015). Taken together, such contributions have shed light on the origins, differences, and implications of visual representations in academia.

However, previous research on visualisation has neglected the overall design of a research project as a crucial stage of scientific practice. In the words of Meyer et al. (2013), “we should aim at actively making use of the potential of visual representations to enable better research processes and results. This starts at the stage of designing projects” (p. 536). Such a research gap is relevant because the overall design of a research project is more complex than that of its constituent parts, requiring holistic and immediate visualisation as a complement to linear and sequential verbalisation (Meyer et al., 2013).

The purpose of this chapter is therefore to present a visual decision-making tool – the Idea Puzzle software – that supports the overall design of a research project. In the words of Parente and Ferro (2016), it is “a support tool to assist PhD students and researchers in the process of designing research projects through a focus on three central dimensions of research that are collectively represented by a triangle” (p. 643). Parente and Ferro (2016) further emphasise the visual dimension of the Idea Puzzle software as follows:

*Our students repeatedly commented that using Idea Puzzle contributed significantly to their understanding of the meaning of the multiple and interrelated dimensions of the research project process. In addition, they applauded the functionality of having an automatic evaluation of their input into each section/piece of the triangle allowing them to control the development of the project design, as well as to decide which points they should invest more time into to build the final “puzzle” (i.e., visual representation) of their research project. (p. 644)*

The two following sections thus review previous contributions on knowledge visualisation and research design, with a particular emphasis on the jigsaw puzzle metaphor and on Philosophy of Science, respectively.

## **Knowledge Visualisation**

According to Eppler and Burkhard (2007), “the emergent field of knowledge visualisation examines the use of visual representations to improve the management of knowledge on all levels” (p. 112). An example of a knowledge visualisation format is the visual metaphor whose main feature is the dual function of a) positioning information graphically to organise and structure it; and b) conveying an implicit insight through the characteristics of the metaphor employed.

Eppler (2003) argues that visual metaphors are powerful templates for experts to communicate their knowledge with non-experts, giving the example of philosophers of science such as Aristotle, Hume, Ockham, Popper, and Wittgenstein. In particular, Aristotle regards the metaphor as a tool of cognition which “provides rapid information and is to the highest degree instructive” (Eppler, 2003, p. 82). Concrete examples of metaphors include Ockham’s Razor, Hume’s Fork, Popper’s Bucket, and Wittgenstein’s Ladder. Interestingly, Wikipedia considers Ockham’s Razor the only scientific law of Philosophy of Science named after a person.

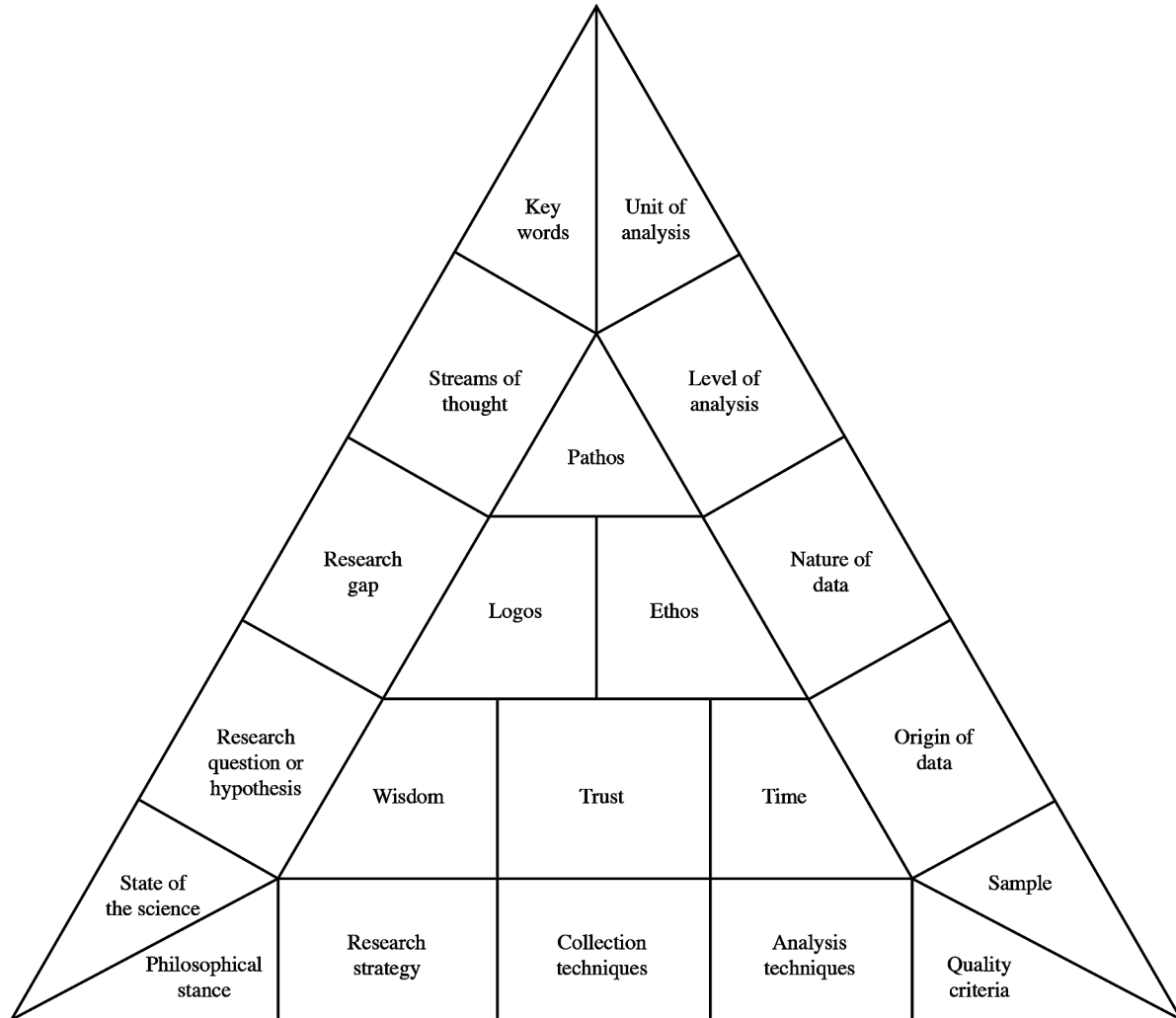
Visual metaphors for knowledge transfer or creation may be natural objects such as an iceberg or human-made objects such as a jigsaw puzzle. The invention of the jigsaw puzzle is attributed to John Spilsbury, a London cartographer and engraver who commercialised sawed pieces of wood with the shape of national boundaries for the teaching of Geography (Hannas, 1972). The jigsaw puzzle is therefore a human-made object created for educational purposes. It is not surprising, therefore, that the jigsaw puzzle metaphor is recurrently employed in academia to research phenomena as diverse as curricular integration (Pearson & Hubball, 2012), environmental uncertainty (Saravathy, Dew, Read, & Wiltbank, 2008), and mobile application development (Danado & Paternò, 2014).

Eppler (2006) compared systematically visual metaphors with three other types of mapping methods – concept maps, mind maps, and conceptual diagrams – recommending their combined uses in four didactic steps. In particular, the author recommends empty conceptual diagrams for joint in-class concept development, mind maps for in-class individual note taking, concept maps for individual reviewing at home, and visual metaphors for joint in-class summaries.

In terms of systematic comparison between the two joint in-class mapping methods, Eppler (2006) considered conceptual diagrams appropriate for concise overviews, structuring of a topic into systematic building blocks, and application to a variety of situations in the same manner, whereas visual metaphors are appropriate as a mnemonic aid, to draw attention and curiosity, and to facilitate understanding by triggering functional associations. In terms of drawbacks, conceptual diagrams may be difficult to understand without knowledge of the category meanings, do not provide mnemonic help, and do not foster creativity or self-expression, whereas visual metaphors cannot be easily modified, may trigger wrong associations, and may be misunderstood.

From such a discussion, it is possible to conclude that the Idea Puzzle software employs a jigsaw puzzle metaphor in the shape of a triangle, with 21 jigsaw pieces (*Figure 1*). The jigsaw pieces, in turn, represent five systematic building blocks – theory, method, data, rhetoric, and authorship – which can be difficult to understand without knowledge of their category meaning. The following section thus reviews the development of the Idea Puzzle framework since 2007 in the light of previous contributions to research design.

Figure 1. Idea Puzzle framework  
 Source: www.ideapuzzle.com



## Research Design

According to Creswell (2009), research design is a plan or proposal to conduct research which “involves the intersection of philosophy, strategies of inquiry, and specific methods” (p. 5). The author proposes a conceptual framework for research design which, correspondingly, adopts the format of a triangle based on the three elements described above – philosophical worldviews, selected strategies of inquiry, and research methods. Such a triangular view of research design is thus restricted to method at the level of philosophical stances, research strategies, and techniques for data collection and analysis. An even more restricted view of research design is espoused by Leshem and Trafford (2007) and Layder (2013), who equate research design with fieldwork.

Brinberg and McGrath (1985) also propose a triangular conceptual framework for research design – the Validity Network Schema – under the assumption that “research involves three interrelated but

analytically distinct domains: the conceptual, the methodological, and the substantive” (p. 15). Such a view of research design is more holistic than the one by Creswell (2009), since it relegates method to one of the three elements of empirical research.

The triangular format of the Idea Puzzle framework (Parente & Ferro, 2016) is based on Brinberg and McGrath’s (1985) Validity Network Schema. In particular, the left side of the Idea Puzzle triangle corresponds to the conceptual domain (theory), its bottom side to the methodological domain (method), and its right side to the substantive domain (data). In the words of Parente and Ferro (2016), “each side of the Idea Puzzle triangle corresponds to one of the three dimensions that every empirical research project should ideally include: ontology (data), epistemology (theory), and methodology (method)” (p. 643).

Huff (2009) took an even more holistic view of research design than Brinberg and McGrath (1985) by proposing a conceptual framework with six major decisions: ontology/epistemology, discipline/profession subfield, literature review, policy/practice, model(s)/explanation/theory, and method(s)/context. In particular, the author claimed that “specific research design decisions in the areas listed (and others as well) must help you depart from what is currently known to your audience, while staying close enough to their interests that your contribution is recognised and valued” (Huff, 2009, pp. 86-87). Such a view emphasises the importance of relevance for academic audiences. Van de Ven (2007) similarly emphasised the importance of relevance, but for both academic and non-academic audiences through the Aristotelian notion of rhetoric. The Idea Puzzle framework (Parente & Ferro, 2016) thus follows Van de Ven (2007) by adding rhetoric to theory, method, and data, as a fourth building block in the upper inner part of the triangle.

At the individual level, Huff (2009) emphasised the importance of personal and professional experience for research design. She describes such an association as follows: “It has taken me a long time to discover how my ‘ordinary’ life could or should inform my academic life. Gradually, I have drawn more explicitly on experience outside of academia” (Huff, 2009, p. 22). In similar fashion, the Idea Puzzle framework (Parente & Ferro, 2016) considers the alignment between the research design and the author’s personal and professional experience as a fifth building block – authorship – visually represented in the lower inner part of the triangle.

The Idea Puzzle framework thus adds two elements – rhetoric (Van de Ven, 2007) and authorship (Huff, 2009) – to the triangle between theory, method, and data suggested by Brinberg and McGrath (1985). In the light of Philosophy of Science, such five elements generally correspond to epistemology (theory), methodology (method), ontology (data), rhetoric (axiology of the audience), and authorship (axiology of the author).

The Idea Puzzle framework was created by the first author in 2007, in the context of an interdisciplinary course on research design for doctoral candidates of Mathematics, Engineering, and Social Sciences. In that particular course, doctoral candidates were sceptical that they could share the same lectures given their contrasting scientific disciplines. As the sole facilitator of the course, the first author reassured the participants that Philosophy of Science (Riggs, 1992) was common to any scientific discipline and created the Idea Puzzle framework of 21 decisions (Parente & Ferro, 2016) to engage them in a common research design challenge. The feedback was positive and the first author received invitations by methodological teachers, deans of Graduate Schools (GSs), research deans, and even university rectors to lecture the same framework to interdisciplinary audiences in other universities and countries.

The point of departure for the Idea Puzzle framework were five methodological decisions – “philosophical stance”, “research strategy”, “data collection techniques”, “data analysis techniques”, and “quality criteria” – inspired by the macro structure of John Creswell’s (1998) book on five approaches to research

design. Such a macro structure is path-dependent in the sense that prior decisions (e.g., philosophical stance) limit the range of options available for subsequent decisions (e.g., research strategy).

Such a funnelling logic can, however, be applied to other than methodological decisions. In fact, the first author soon realised that teaching research design without reference to the theoretical and empirical context of the research project was pedagogically counterproductive. He therefore added five theoretical decisions and five empirical decisions to the initial five methodological decisions.

The five theoretical decisions help doctoral candidates focus a literature review in terms of two “keywords”. Such two keywords limit, in turn, the range of “streams of thought” to review. Experts within the streams of thought will suggest, in turn, avenues for future research (“research gap”), thus legitimising a certain “research question or hypothesis”. The result of such a funnelling sequence of theoretical decisions is a synthesis of the current answer to the research question or the hypothesis (“state of the science”).

The five empirical decisions, on the other hand, help doctoral candidates focus their discussion of evidence in terms of a “unit analysis” at a certain “level of analysis”. Such unit and level of analysis will be documented, in turn, with qualitative or quantitative data (“nature of data”), based on primary or secondary sources (“origin of data”). The result of such a funnelling sequence of empirical decisions is a set of one or more examples of the unit of analysis (“sample”).

Taken together, the 15 theoretical, methodological, and empirical decisions can be visualised as a triangle that reflects the dilemmatic nature of the research process (McGrath, 1981) and the need for a permanent interplay between the research question or hypothesis, the research strategy, and the empirical sample (Brinberg & McGrath, 1985). In particular, recent topics are expected to involve fewer streams of thought and exploratory research questions, thus requiring qualitative research strategies and small samples. Mature topics, on the other hand, generally involve larger numbers of streams of thought from which operationalisable hypotheses can be deduced and tested with quantitative research strategies, thus requiring large samples for inferential statistics.

The triangle reminds doctoral candidates that methodology can only be decided in relation to epistemology and ontology (Tsang, 2016). In other words, it helps doctoral candidates integrate method, theory, and data, with a focus on theory development (original contribution to knowledge) rather than research methods per se (Hillman, 2011). On the other hand, such an integration of method, theory, and data through 15 decisions helps doctoral candidates realise that an empirical research project involves a sample of data, but also of theory and method (Mullins & Kiley, 2010). In terms of academic writing, the triangle provides food for thought for the structuring of the literature review (theory), the methodological section (method), and the discussion of evidence (data) in academic texts such as research proposals, dissertations, and articles.

In addition to the 15 decisions on theory, method, and data, the first author included in the Idea Puzzle framework three decisions on rhetoric, following Van de Ven’s (2007) notion of engaged scholarship that is rigorous for academic audiences and relevant for society. The three rhetoric decisions of the Idea Puzzle framework are “pathos”, “logos”, and “ethos”, following Aristotle’s trilogy on rhetoric. Such three types of arguments are expected to raise awareness of the emotions, logic, and credibility conveyed by the conclusions of an academic text.

In terms of emotions, it is relevant to consider the academic, public, and commercial interest of the research project as well as its ethical and political implications. In terms of logic, it is important to acknowledge the difference between inductive, hypothetic-deductive, and abductive reasoning. The credibility of an academic text largely results from the disclosure of theoretical, methodological, and empirical limitations. The three rhetoric decisions of the Idea Puzzle framework thus provide inspiration

for the conclusions of an academic text, namely in terms of research and practical implications, in spite of theoretical, methodological, and empirical limitations.

The final three decisions of the Idea Puzzle framework are authorial in the sense that the author is conceptualised as part of the system of 21 dilemmatic decisions (McGrath, 1981). In particular, the author's CV and future career is regarded as an accumulation of three interdependent, intangible and irreversible assets – “wisdom”, “trust”, and “time” – following Pierre Bourdieu's (1986) notions of cultural, social, and economic capital, respectively. Wisdom includes the author's education as well as personal and professional experience which will benefit the research project (Huff, 2009). Trust is a restricted notion of networking, since it only refers to persons that will be mentioned in the acknowledgements of an academic text. Time refers to the author's availability for the research project since part-time working regimes are usually associated with lower completion rates (Council of Graduate Studies [CGS], 2007).

The overall Idea Puzzle framework of 21 decisions thus emphasises the need for integration of theory (epistemology), method (methodology), and data (ontology) – the triangle mentioned by Parente & Ferro (2016) – as well as rhetoric (axiology of the audience) and authorship (axiology of the author) – upper and lower inner parts of the triangle, respectively – for a coherent research design in the light of Philosophy of Science (Morais, 2010). Such an integrative and holistic view of research design follows previous calls for more integrative thinking in general (Kallio, 2011) and doctoral training in Philosophy of Science in particular (Abrahamson, 2008).

Such a systemic perspective of the research process (Brinberg & McGrath, 1985) based on dilemmatic decisions (McGrath, 1981) complements the chronological visualisation of the research process as a sequence of project tasks such as literature review, data collection, and data analysis (Bryman, 2012). In the terminology of the Vitae Researcher Development Framework (Careers Research and Advisory Centre [CRAC], 2010), the Idea Puzzle framework emphasises the need for problem solving skills for research design (cognitive skills) as a complement to project planning and delivery skills for research planning (research management skills). The following section reviews the development of the Idea Puzzle framework into a software and its application at the University of Auckland.

## **THE IDEA PUZZLE SOFTWARE AT THE UNIVERSITY OF AUCKLAND**

In 2008, the first author established a public limited company – Idea Puzzle – to visually support integrative research design based on Philosophy of Science through a dedicated website and software based on the Idea Puzzle framework. The initial funding included, among others, seed capital from a public limited company – Crivo – that specialises on university spin-offs and individual researchers licensing intellectual property from applied research.

The main research and development expenses of Idea Puzzle are the continuous investment in the Idea Puzzle website and software as well as in free seminars lectured by the first author in HEIs. In 2009, the beta version of the Idea Puzzle software was made available for free at the respective website. In 2012, the University of Porto became the first HEI ever to acquire the license of the Idea Puzzle software, having renewed it annually ever since.

In its current version, the Idea Puzzle software asks 21 questions, helps answer them, and allows the self-evaluation of each answer. The sequence of 21 questions follows a funnel logic to help focusing a research design. The output of the Idea Puzzle software is a research design with an overall score and a

visual jigsaw puzzle based on the 21 answers and the respective self-evaluation. The estimated time to complete a research design is of one working day, ideally six months after enrolling in a PhD.

The main benefits of the Idea Puzzle software are the coherent design and defence of a research project from the point of view of Philosophy of Science (Morais, 2010). To date, the Idea Puzzle software has helped design more than 4000 research projects worldwide.

In 2017, the University of Auckland agreed to purchase a university-wide license of the Idea Puzzle software. Since it was not created exclusively for the University of Auckland it was necessary to make it work for its constituencies. This was achieved through: a) communications to supervisors and doctoral candidates; b) a mandatory induction day for new doctoral candidates in the first few months of candidacy; c) the “Writing the full thesis or research proposal” workshop; and d) the “Organizing and writing the literature review” workshop.

In particular, the Idea Puzzle software has been explained to the doctoral candidates and supervisors through university-wide communications, emphasising that it complements rather than replaces regular academic support. After the induction day, participants are sent an email message thanking them for their involvement during the day and mentioning that they can delve more deeply into the question of what doctoral level research is (one of the key discussion themes during the induction) for their own project, by registering at the Idea Puzzle website. In addition, doctoral candidates are advised to watch the 25-minute *YouTube* presentation by the first author to help them understand the software’s purpose. This approach ensures that all new doctoral candidates get to know about the Idea Puzzle software and its contextualisation within their doctoral induction to the university.

In addition, two core Doctoral Skills Programme (DSP) workshops have been redesigned – “Writing the full thesis or research proposal” and “Organizing and writing the literature review” – to accommodate the Idea Puzzle software. In particular, each student has to submit a fully developed thesis proposal before final confirmation into the doctoral programme around nine months after enrolment. While the required length and format of the written proposal will vary from faculty to faculty, they all go through independent review by a departmental or school postgraduate committee and each student has to meet with the committee members to discuss and (if required) defend it. And, in essence, all proposals irrespective of academic discipline, need to demonstrate that: there is a coherent thesis question or problem (that will likely yield an original contribution); the doctoral candidates are aware of the key debates in the literature pertinent to their topic; the methodological approach is appropriate for the task at hand; and that, overall, the document is coherent, well written, scholarly, and persuasive.

With the availability of the Idea Puzzle software to help doctoral candidates think through the key questions about their research (and hopefully spark conversations with their supervisors about ontology and epistemology), the DSP thesis proposal workshop has been altered to focus more on the university’s requirements (timelines, resources, financial support for attending academic conferences, and conducting fieldwork etc.) and examining recent thesis proposals donated by doctoral candidates in their second and third years as University of Auckland exemplars. So, the face-to-face workshop deals with the practicalities of producing a written document to meet the university’s expectations with the proviso that the Idea Puzzle software is the recommended mechanism to develop the content for their full thesis proposal.

On the other hand, people attending the “Organizing and writing the literature review” workshop are asked to watch the first eight minutes of the 25-minute *YouTube* presentation by the first author, where he overviews the “theory” set of questions embedded in the Idea Puzzle software. The pre-workshop information thus instructs participants as follows:

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*Dr Morais discusses the literature review: key words, key debates in your research as well as methodology and data collection. His talk is 25 minutes; the opening eight minutes deal with the literature review (the first five theoretical questions of the puzzle). Watch the whole presentation if you have time before the workshop but, if nothing else, please view the first part where he discusses the literature review and think about the questions he poses. We will build on these in the workshop.*

This preparation not only directs doctoral candidates to the Idea Puzzle software as a resource for the entirety of the doctorate but in the short-term it helps focus the workshop discussions and activities to a higher level of abstraction rather than getting bogged down in minutiae of each person's literature review. Facilitators ask participants to explain their two key concepts or key search terms in smaller groups and give a lay person's explanation of not only who were (or are) the seminal researchers for their topic, but why these researchers, and their associated works, are important. These conversations are to help participants create a narrative or overarching purpose for their literature review, from which they can start identifying sub-section headings for the review and then start writing.

As a result, DSP organisers now expect doctoral candidates to acquire generic project management skills with DSP workshops (CRAC, 2010), deeper integrative thinking with the Idea Puzzle software (Abrahamson, 2008; Kallio, 2011), and further feedback from their supervisors and methodology teachers. The Idea Puzzle software thus fills in a gap in the DSP, but it requires an introduction to its purpose in the context of the doctorate. This and other issues are discussed in the following section.

## **ISSUES, CONTROVERSIES, AND PROBLEMS**

Between 2007 and 2017, the first author tested the Idea Puzzle framework in 231 seminars with doctoral candidates, supervisors, and methodological teachers. Such seminars, usually with a duration of one hour, provided face-to-face questions and feedback to the Idea Puzzle framework and were supplemented by an online anonymous feedback questionnaire emailed as a link to the participants after the seminar.

In April 2018, the first author presented the analysis of the first 1004 responses to the online anonymous feedback questionnaire at the 13<sup>th</sup> Quality in Postgraduate Research Conference in Adelaide, Australia (Morais, 2018). The response rate was 15.5%, from a total of 6487 seminar participants from 71 HEIs in 15 countries: Austria, Belgium, Chile, Denmark, Estonia, Finland, Germany, Lithuania, Portugal, Slovakia, Spain, Sweden, Switzerland, UK, and USA.

The online anonymous feedback questionnaire included eight quantitative closed questions to be rated in a scale of 0 to 10. The average rating per closed question was the following:

1. Achieving the objectives of the seminar – 8.7.
2. Contents of the seminar – 8.8.
3. Suitability of the teaching method – 8.7.
4. Study materials – 8.0.
5. Interaction with the participants – 8.2.
6. Lecturer's knowledge of the topic – 9.5.
7. Clarity of teaching – 9.1.
8. Total evaluation of the seminar and the lecturer – 8.8.



According to such results, the Idea Puzzle framework is primarily associated with new knowledge and clarity. Such feedback may reflect, in turn, the emphasis of the Idea Puzzle framework on Philosophy of Science rather than research methods, on dilemmatic decisions rather than sequential tasks, and on sampling as a matter of data, but also theory and method.

The online anonymous feedback questionnaire also included three qualitative open questions on the best points of the seminar, suggestions for improving the seminar, and topics that could justify other future seminars. The qualitative analysis of the respective responses generated the following alphabetical index of themes of interest for the participants in the 231 seminars: academic writing, assessment, comparative studies, data analysis, data collection, digitalisation, interdisciplinarity, impact, literature review, Philosophy of Science, project management, Psychology of Science, research cases, research ethics, research focus, research methods, research teams, science communication, Sociology of Science, specialisation, supervision, thesis defence, theory development, and visualisation.

Philosophy of Science was mentioned by 92 respondents as topic that could justify other future seminars (9.1% of the 1004 respondents). Visualisation was mentioned as one of the best points of the annual seminar “How to design your PhD” at the European Institute for Advanced Studies in Management (EIASM) in Brussels: “The Idea Puzzle is very helpful in terms of organising one’s research stand and helps visualise the work that is yet to be done.”

Based on the facilitation of the 231 seminars and the analysis of the 1004 responses to the online anonymous feedback questionnaire, the first author concluded that:

1. The notion of research design tends to be restricted to method (rather than theory, method, data, rhetoric, and authorship).
2. The notion of sampling tends to be restricted to data (rather than theory, method, and data).
3. Doctoral candidates struggle to find a balance between focus and quality (more theory than they can synthesise, more methods than they can implement, and more data than they can process in the course of a three-year doctorate).
4. Supervisors and methodology teachers tend to convey sequential (e.g., research question first), boundary (e.g., qualitative vs. quantitative) and conflating (e.g., research strategy and technique) myths.
5. Cross-cultural face-to-face seminars are a powerful vehicle for theory development and testing.
6. Online anonymous feedback is more sincere than face-to-face seminars.
7. Online anonymous feedback reveals a wide range of research training gaps from the point of view of doctoral candidates, starting with Philosophy of Science.

In August 2017, the second author conducted a usability testing of the Idea Puzzle software at the Libraries and Learning Services of the University of Auckland, together with a colleague with expertise in digital learning resources. Five international doctoral candidates were individually interviewed while they engaged with the Idea Puzzle software for about 1-2 hours over lunch time. The doctoral candidates were from South and East Asia, South America, and Europe (four of whom were from non-English speaking backgrounds). One interviewee really liked the Idea Puzzle software and wished it had had the opportunity to use it right after enrolling as a doctoral candidate. Three interviewees were very supportive of the Idea Puzzle software and promptly answered its questions. One interviewee, however, was very ambivalent about the purpose of the Idea Puzzle software in the context of the doctorate.

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Navigation feedback from the doctoral candidates included the lack of an explicit conclusion after answering the 21 questions and the impossibility to export the research design in Word format. Deeper feedback included the unclear purpose of the Idea Puzzle software and its integration with the rest of the doctorate.

The DSP coordinators (including the second author), on the other hand, were initially concerned that the four European languages available at the Idea Puzzle website – Portuguese, English, Spanish, and French – would be insufficient for non-European users. Such concerns were partially alleviated, however, when one interviewee demonstrated familiarity with the four languages. The following section presents the solutions implemented to address each of the issues identified in the usability testing at the University of Auckland as well as general recommendations based on the large-scale survey described in this section.

## **SOLUTIONS AND RECOMMENDATIONS**

One of the suggestions of the 19-page usability testing report from the Libraries and Learning Services of the University of Auckland was the creation of an introduction to the Idea Puzzle software at the Idea Puzzle website (Morais & Brailsford, 2018). As a result, a new home page was created (“Introduction to the software”), including a short text and a video introduction.

The introduction states the problem (lack of doctoral training on Philosophy of Science, integrative thinking, timely completion, and focus); the solution (visual decision-making tool for an integrative research design based on Philosophy of Science, including output, examples, benefits, and practicalities); as well as the time and timing required to complete a research design (one working day, ideally six months after enrolling in a PhD).

In terms of usability, the following updates were made in the Idea Puzzle software:

1. The 21 jigsaw pieces of the triangle are now triggered by the user’s mouse to pop-up an alternative text stating their category (theoretical, methodological, empirical, rhetorical or authorial) and the respective question.
2. The word implicit was removed from all questions.
3. The help button has now darker and larger font than other buttons.
4. The philosophical terminology was removed, except in the help to answer question 6 (philosophical stance).
5. The examples in the help are now more prominent.
6. The examples now include five disciplines (Design, Engineering, Management, Medicine, and Psychology).
7. The help and examples now open in a new page of the Internet browser to be more visible.
8. A button “previous” has been added before “next”, being deactivated in question 1.
9. The button “next” was deactivated in question 21 to prompt users to conclude the process of answering the 21 questions with the buttons “preview” and “print PDF”.
10. A button “convert PDF” was added to the software menu to allow the sharing of the research design with supervisors and methodology teachers in Word format.

In terms of recommendations, this section builds on the results of the large-scale survey presented in the previous section to suggest higher plurality of contents in doctoral curriculum (Gonzalez-Ocampo et al., 2015). In particular, doctoral candidates need to be aware of holistic (Huff, 2009) rather than restricted notions of research design (Creswell, 2009) to account for the integration of theory, method, data, rhetoric, and authorship in their research projects. In addition, they might benefit from an extended notion of sampling that applies to data as well as to theory and method (Mullins & Kiley, 2010).

Particularly delicate is the struggle of doctoral candidates to find a balance between focus (McGrath, 1981) and quality (Brinberg & McGrath, 1985). In this respect, this section suggests a period of divergent reading in the first six months after enrolling in a PhD and convergent thinking thereafter. Correspondingly, doctoral candidates are invited to diverge with mind and conceptual maps (Eppler, 2006) in the first six months, and converge with the Idea Puzzle software thereafter (Parente & Ferro, 2016).

A related issue is that doctoral candidates should not be asked by supervisors or methodology teachers a research question or hypothesis as necessarily the first step in research design because it tends to be deduced from the literature review (Bryman, 2012). This is not to say, however, that research is just a sequence of project tasks such as the literature review because it also involves dilemmatic decisions (McGrath, 1981).

In addition, it is important to clearly separate philosophical stances, research strategies, and techniques for data collection and analysis (Creswell, 1998) and to remain open about the pros and cons of qualitative, quantitative, and mixed research designs (Creswell, 2009; McGrath, 1981). Finally, more research training on Philosophy of Science is needed for doctoral candidates (Abrahamson, 2008) so that a PhD may indeed mean that one has become a Doctor of Philosophy no matter the discipline of graduation. In line with these recommendations, the following section suggests avenues for future research.

## **FUTURE RESEARCH DIRECTIONS**

Although this chapter presents the results of a large-scale survey and a usability testing, further feedback is necessary to validate the impact of the Idea Puzzle software on its users. As a first step in that direction, the online anonymous feedback questionnaire has been updated to include two quantitative and two qualitative questions on the utility and usability of the Idea Puzzle software for the participants in the respective seminar.

In similar fashion, further usability testing such as the one conducted at the University of Auckland is necessary to better understand the contribution of the Idea Puzzle software to the research of doctoral candidates. This is particularly important given the continuous investment on the Idea Puzzle website and software as a result of user feedback and technological development.

By the end of 2018, approximately 630 new University of Auckland doctoral candidates will have been exposed to the Idea Puzzle software through the induction day. The two authors will then be able to calculate the proportion of new candidates who voluntarily took up the offer to register at the Idea Puzzle website. In addition, it will be possible, with ethics approval, to invite users to attend focus groups that explore how they used the Idea Puzzle software, especially to develop their full thesis proposal and write a draft literature review chapter.

Another avenue for future research is the study of the Idea Puzzle software as a knowledge visualisation tool. In this respect, it will be important to assess possibilities such as different colours or shades to further clarify its three levels of synthesis: a) three sides of the triangle; b) five categories of decisions;

and c) 21 key decisions. A related issue is whether the jigsaw puzzle metaphor employed by the Idea Puzzle software may be complemented with other mapping methods (Eppler, 2006).

These questions provide interesting avenues for future research. In particular, it will be important to conduct both qualitative and quantitative studies of users' reaction to the Idea Puzzle software in the context of their doctorate. More importantly, it will be relevant to assess if the use of the Idea Puzzle software increases completion rates above their institutional average.

## **CONCLUSION**

The Idea Puzzle software stimulates visual integrative thinking (Kallio, 2011) for coherent research design in the light of Philosophy of Science (Morais, 2010). In particular, it provides a framework of three domains (Brinberg & McGrath, 1985), five major categories (Epper, 2006), and 21 dilemmatic decisions (McGrath, 1981) for a more holistic (Huff, 2009) and visual (Meyer et al., 2013) integration of research design. For that purpose, it employs a visual metaphor which is known for its cognitive and instructional virtues as well as for its adoption by several philosophers of science (Eppler, 2003). The particular visual metaphor of the Idea Puzzle software is the jigsaw puzzle, a human-made object which was invented for educational purposes (Hannas, 1972). A large-scale survey in 71 HEIs based on an online anonymous feedback questionnaire following 231 seminars in 15 countries inspired recommendations for doctoral education. In particular, the adoption of the Idea Puzzle software in HEIs suggests the need for more Philosophy of Science and Knowledge Visualisation in doctoral curriculum (Gonzalez-Ocampo et al., 2015). In addition, the first usability testing of the Idea Puzzle software at the University of Auckland allowed the identification of issues and respective solutions concerning its utility and usability. Correspondingly, the main suggestions for future research are the need for more studies on the utility and usability of the Idea Puzzle software as a knowledge visualisation tool for the overall design of a research project.

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## KEY TERMS AND DEFINITIONS

**Conceptual Framework:** An analytical tool that depicts a certain phenomenon parsimoniously.

**Integrative Thinking:** A synthesis of lower-level elements that integrates and reformulates them into a coherent new whole.

**Jigsaw Puzzle:** A human-made object with the educational purpose of assembling jigsaw pieces with different shapes to convey an overall picture.

**Knowledge Visualization:** A visual representation that allows the transfer and creation of knowledge between two or more persons.

**Philosophy of Science:** An academic discipline that studies the logic of scientific discovery and justification for the acquisition of original knowledge.

**Research Design:** A draft that integrates theory, method, data, rhetoric, and authorship for subsequent implementation of academic research.

**Research Software:** A computer-based application that converts inputs into outputs to support the user in one or more research tasks.

**Usability Testing:** A face-to-face session in which interviewers register the reactions of interviewees as they interact with a certain website or software.

**Visual Metaphor:** A visual representation that maps knowledge with the support of an analogy from the natural or human-made world.

**Visual Representation:** A mode of communication based on holistic and immediate visuals rather than linear and sequential verbalization.

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# Chapter 20

## Research Design and Methodology

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### **ABSTRACT**

*This chapter presents the research design methodology. It outlines the research process and the philosophical underpinning for this research. It has set out the research problem under investigation and mapped out the various steps that were undertaken. This research adopted a mixed research method approach as the most appropriate and a survey was the most effective instrument in addressing this enquiry of SPP. The philosophical position adopted within this study was one of the pragmatists, which has the capacity to hold different world views and not be constrained by one specific philosophical position. Pragmatists are not committed to one system of philosophy and reality, and researchers are free to choose the methods, techniques, and processes that have the best fit to meet the needs of the research.*

### **4.1 INTRODUCTION**

This chapter presents the research design methodology. It outlines the research process, and the philosophical underpinning for this research. It has set out the research problem under investigation; mapping out the various steps that were undertake. This research adopted a mixed research method approach as the most appropriate and a survey was the most effective instrument in addressing this enquiry of SPP.

The philosophical position adopted within this study, was one of the pragmatists, which has the capacity to hold different world views and not be constrained by one specific philosophical position. According to Creswell (2003:12), pragmatists are not committed to “one system of philosophy and reality”, and researchers are free to choose the methods, techniques and processes which have the best fit to meet the needs of the research. This book required the researcher to collect and analyse data from multiple sources and in different ways, to supports the pragmatist philosophical perspective and as such was the most appropriate fit for the investigation.

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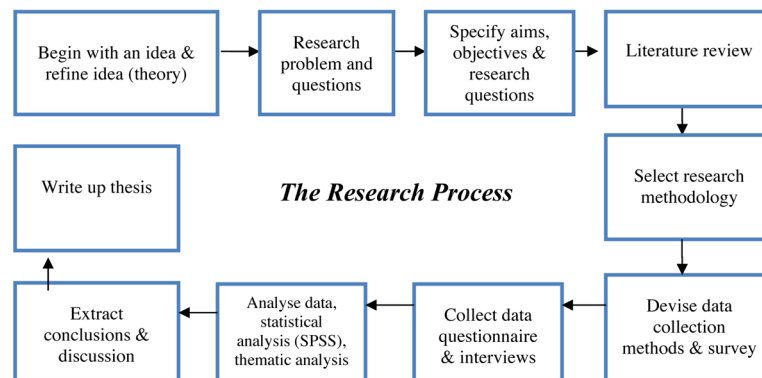


## 4.2 RESEARCH DESIGN

The data collection and analysis methods will be underpinned by the overall research design, as it forms the basis for the direction of the research activities and data collection. According to Churchill (1976), research design is simply the framework or plan for a study used as a guide in collecting and analysing data. Churchill describes research designs as a “blueprint” (1976:98), whereby having a framework will ensure that the research is relevant and enables the researcher to meet the objectives in the most efficient and economical manner. Research design is about organising research activities, including the collection of data in a way that is most likely to achieve the research objectives (Easterby-Smith et al., 2010). The type of research and the data collection methods used will be determined by the area of research under investigation, and the data collection methods used will be aligned to meet the research objectives. Once the research problem has been defined and clearly specified, the research effort will logically turn to data collection and subsequently analysis and interpretation (Churchill, 1976) (see Figure 1).

Figure 1. The research process framework

Source: author.



## 4.3 RESEARCH PHILOSOPHY

This section will provide the philosophical position underpinning the research. The philosophical position which a researcher adopts provides the framework and direction for the study (Creswell, 2007; Saunders et al., 2007; Quinlan, 2011). Researchers who do not consider philosophical questions within their research design may find this has a serious adverse effect on the quality of their research (Easterby-Smith et al., 2010).

Fundamentally, the researcher’s philosophical perspective will reinforce and guide the direction of the research, ensuring that there is clarity and capacity to answer the research questions. According to Quinlan (2011:95), “the research methodology must be appropriate for the research project”; it must fit with the research project in terms of context, content and philosophical presupposition. The suggestion here is that there must be consistency between the philosophical perspective and the strategy which is employed. The choices about which method is used will impact and determine how the data is collected, analysed and interpreted. The most appropriate method must be used in order to answer the

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research questions and ensure that the results are reliable and robust, so that it may stand up to scrutiny and achieve a successful outcome.

Philosophy is determined by one's view of the world (Saunders et al., 2007) and, according to Quinlan (2011), all research projects are underpinned by the philosophical position of the researcher, which can be seen throughout the steps within the research process (Figure 1). Crotty (2005) contends that our assumptions of how we view the world are based upon the nature of reality (which relates to questions of ontology) and how our knowledge is acquired (a question of epistemology). Creswell and Plano-Clark (2007) posit that it is important to understand the worldwide view, as it informs the direction of the research and provides legitimacy.

The debate within this section relates to where this study is to be conceptualised and what philosophical position is going to be adopted. This section will discuss the different philosophical perspectives of positivist, interpretivist and pragmatist, and explain which position is most suitable and compatible for this study.

Creswell and Plano-Clark (2007) posit that philosophy is a dynamic phenomenon which is always changing and there should be no set standard. However, researchers have a tendency to categorise them (Creswell, 2003). There are two principal social science paradigms which have dominated approaches to research for a great number of years ('positivist' and 'interpretative'), and both are very dominant regarding their superiority in management research. Many authors have identified a number of different paradigms which have substantially relied upon the positivist/interpretative perspective (Laughlin, 1995; Burrell and Morgan, 1979; Lincoln and Guba, 2000). It has often been argued that "to be located within a particular paradigm is to view the world in a particular way" (Burrell and Morgan, 1979:24) and, as a consequence, paradigms are based on different paradoxical views of the social world, based upon different assumptions with regard to the nature of science and society (Pansiri, 2005).

### **4.3.1 Positivist**

A researcher tends to adopt the position of the natural scientist (Creswell, 2007; Saunders et al., 2007; Quinlan, 2011) and the tendency here is to operate within a paradigm where the view of the world is seen as a singular "observable social reality" (Saunders et al., 2007:83). Quinlan (2011) argues for the positivist's view the world, as being totally objective and where they can make value-free detached interpretations (Saunders et al., 2007). There is a great deal of emphasis on structure and uniformity, which lends itself to having a highly structured method of data collection which supports replication (Gill and Johnson, 2002) and which also aligns itself to quantifiable observation, which is identifiable with statistical analysis. The focus of the positivist is to collect data in a systematic, unbiased, quantifiable way where they are able to gather facts and measure patterns or frequency of recurrence (Easterby-Smith *et al.*, 2010). Teddlie and Tashakkori (2009:5) define quantitative techniques as the process of "gathering, analysis, interpretation and presentation of numerical information". This position is argued by Walle (1997:525), where he contends that:

*"...the phenomenon under consideration must be empirically verifiable by both the researcher and the larger scientific community and this position can only be argued from a positivist perspective".*

There was an emerging debate amongst academics surrounding the positivistic philosophy, resonating with other scholars, which began a quest in order to explore and find new paradigms (Geertz, 1973,

1983; Lincoln and Guba, 1985; Denzin, 1989). According to Teddlie and Tashakkori (2009) constructivist theory became the most popular. The next section will look at the interpretivist/social constructivist paradigm in order to offer a different perspective.

### **4.3.2 Interpretivist/Social Constructivist**

In contrast to the positivist's view of the world, the interpretivist contends that the social world of business is far too complex and contains too many variables, and does not lend itself towards the definitive "laws" of the natural scientist (Saunders et al., 2007:83). Social constructivists believe that knowledge is determined by one's beliefs and thoughts on how one views the world and environment. This view is consistent with Easterby-Smith et al. (2010:58), who suggest that "reality" is not objective but a socially constructed phenomenon or, as described by Habermas (1970), as interpretivist which gives meaning through people (Habermas, 1970; Shotter, 1993; Teddlie and Tashakkori, 2009). There is an ongoing debate surrounding objectivity and subjectivity within the socially constructed world, which suggests that the availability of rich and meaningful insights would be lost by adopting the law of mass generalisation and objectivity (Saunders et al., 2007) or as described by Remenyi et al. (1998:35), "the details of the situation to understand the reality working behind them". The focus of the interpretivist approach is to appreciate that each individual's view of the world is unique as a result of their own experience and circumstances (stimuli), which manifests itself through their thoughts and beliefs (Easterby-Smith et al., 2010), and it is this stimuli which will often have been influenced by how the individual views the world (Saunders et al., 2007). Due to the nature and level of complexity involved through the uniqueness and nuances exhibited by individuals, it is extremely difficult to capture the responses of individuals through data which has been collected quantitatively, and Easterby-Smith et al. (2010) contend that a positivist view would not be adequate or appropriate. In this context, the interpretivist will usually collect data in a subjective and qualitative format. This has been described as thematic data analysis, which is the analysis of narrative data using inductive techniques. This primarily leads to themes being developed or identified (Teddlie and Tashakkori, 2009).

The next section will look at the philosophical position of the pragmatist, as the pragmatist departs from and rejects the 'either/or choices' proposition which is allied within the two previous paradigms of the positivist and interpretivist/social constructivist.

### **4.3.3 Pragmatist**

Mixed methods research has been defined as the type of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language into a single study (Johnson and Onwuegbuzie, 2004). According to Creswell (2003), pragmatists are concerned about circumstances, consequences and situations, compared to the positivist perspective. There is an inherent anxiety amongst pragmatists with regard to application - will what is being suggested work and will it resolve the problem in hand? (Patton, 1990). Teddlie and Tashakkori (2009:7) define pragmatism as "a destructive paradigm that debunks concepts of truth and reality and focuses on what works". Creswell (2003) posits that researchers inversely look at methods as being the most important; they look at the problem as being the most important aspect of the research. Researchers use all approaches to understand the problem (Rossman and Wilson, 1985) and this represents a different philosophical perspective and forms the basic underpinning for mixed methods studies (Tashakkori and Teddlie, 1998).

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Creswell (2003:12) asserts that pragmatists are not committed to “one system of philosophy and reality”, and that researchers are free to choose the methods, techniques and processes which have the best fit to meet the needs of the research. He goes on to argue that the world does not operate in perfect symmetry and that “truth is what works at the time, and it is not based in a strict dualism between the mind and reality” (*ibid.*).

Saunders et al. (2007) argue that it is easy to suggest that one research method is better than another, although Quinlan (2011) contextualises this as ‘just having a better fit’. Pragmatism has been upheld as the foundation of mixed methods and, depending on the nature of research, it can be adopted to yield better outcomes (Pansiri, 2005). Pragmatists have a different world view which is not constrained to one philosophical position (Creswell, 2003), they are able to use a mixed methods approach in order to collect and analyse data both quantitatively and qualitatively.

### **4.4 THE RESEARCH PHILOSOPHY UNDERPINNING THIS STUDY**

The philosophy adopted within this research is one of pragmatism. The capacity to hold different world views which are dichotomous and contradictory in their assumptions is paradoxical, however appropriate. The ability to collect and analyse data in different ways suggests that the pragmatist philosophical perspective is an appropriate fit. Many published studies have used both quantitative and qualitative approaches in relation to their research (Creswell, 2003). As this study uses multiple determinants and operates within a dynamic environment, I would argue that, based on the research problem and the ability to answer the research questions, I, as researcher, have a requirement to adopt a more flexible approach to the research. One can then ask questions through multiple channels, such as conducting a survey through the use of questionnaires and one-to-one interviews, thus ensuring that the depth of the research is underpinned not only by adopting a pragmatist approach, but also by the ability to triangulate the findings. This lends itself to a mixed method approach which, in this context, would be more appropriate and a better fit for this research. As posited by Onwuegbuzie and Johnson (2006:48), researchers who adopt what they describe as the “middle of the road” approach, see some truth and insight to be gained from multiple perspectives.

#### **4.4.1 Restatement of the Research Objectives and Questions**

At this juncture it is important to restate the research objectives and questions, as they inform all other aspects of the research. The objectives of the research are to ascertain what determinants impact on sales peak performance (SPP) and where the locus of control (LOC) resides. In order to achieve this, I will attempt to answer the research questions. These will act as a spring-board for finding answers to questions which have been of concern for practitioners and academics alike, but will also fill gaps that exist within the literature.

1. What are the determinants that contribute to the sales peak performance (SPP) amongst business to business (B2B) sales professionals?
2. Where does the locus of control (LOC) reside in relation to SPP? Does the ability to perform at SPP level depend upon the internal locus of control (ILOC) or upon the external locus of control (ELOC)?

3. What is the definition of SPP?
4. What is the framework for SPP?

#### 4.4.2 The Mixed Methods Approach

Researchers who hold different philosophical perspectives may have difficulty with mixed methods research and regard it as a challenge, which results in a disparity created by their different beliefs (Greene, 2007). Bergman (2010) suggests that mixed methods research is more suitable for exploring and examining meaning within the construction of theories and in understanding how respondents make sense of their experiences and circumstances which they report during interviews or during the completion of questionnaires. Instead of just merely comparing response frequencies between groups or samples, it is suggested that a:

*“...systematic inquiry into the variations of social constructions of meaning among interview and survey respondents may not only help in validating the research instruments and scales, but may go further in that they could produce complementary subsets of results, which would enrich overall findings” (Bergman (2010:171).*

As a philosophical underpinning for mixed methods studies, Tashakkori and Teddlie (1998) and Patton (1990) convey the importance of focusing attention on the research design problem in social science research and then using pluralistic approaches to derive knowledge about the problem. Mixed methods research has the advantage that it can mix both quantitative and qualitative methodological characteristics within a single research study (Tashakkori and Teddlie, 1998; Onwuegbuzie and Johnson, 2006). The overarching principle of mixed methods research is the ability to combine approaches which display complementary strengths and no corresponding weaknesses (Brewer and Hunter, 1989; Johnson and Turner, 2003). Overall strength is determined by the inherent strengths exhibited independently of each other, of both the quantitative and qualitative methods (Onwuegbuzie and Johnson, 2006).

Mixed methods research also has the advantage that data can be triangulated, which mitigates any potential biases or nuances which may be inherent within a particular method (Quinlan, 2011). It also has the capacity to enhance and enrich existing knowledge by “filling in the gaps” which studies adopting a singular approach are unable to do (Currall and Towler, 2003:524). Denzin (1978) suggests that there are four ways in which research can be triangulated:

1. Data triangulation, which involves the use of different data sources, such as questionnaires and interviews.
2. Methodological triangulation, which is the ability to use multiple methods in the research of a particular phenomenon.
3. Investigator triangulation, by the use of more than one researcher.
4. Theory triangulation, which according to Patton (2002:247) is “the use of multiple perspectives to interpret a single set of data”.

#### 4.4.2.1 Strengths and Weaknesses of Mixed Methods Research

I recognise the advantages of mixed methods research and thus within the context of this study various different data sources will be used (to be discussed further within this chapter). According to Onwuegbuzie and Johnson (2006), the following are potential areas of strengths:

- The addition of words and narrative can be used to give meaning and understanding to numbers.
- The integration of quantitative and qualitative research will utilise the strengths of both paradigms.
- Mixed methods research can facilitate a wider and more complex range of research questions, as the researcher is not constrained to any one particular method or approach.
- The researcher has the capacity to use the strengths of an additional method to compensate any inherent weaknesses which are present within another method, by integrating both methods into the research study.
- It can provide stronger evidence for a conclusion through convergence and corroboration of findings.

I, as researcher, also acknowledge that where there are strengths, there are also competing weaknesses in relation to mixed methods research.

#### 4.4.2.2 Weaknesses

There are a number of identifiable weaknesses within mixed methods research (Onwuegbuzie and Johnson, 2006). Research purists contend that one should always operate within either a qualitative or quantitative paradigm, and not mix the two paradigms (Collins et al., 2006).

- The first challenge is one of the length of time it takes to complete research using two data collection methods compared to one, as it is inherently more time consuming.
- The challenge or potential problems which may arise when a researcher mixes paradigms.
- A researcher has to be sufficiently skilled in order to deal with conflicting data and have the capacity to accurately analyse the results.

Other studies which have used a mixed methods approach have taken a variety of forms. Gupta and Govindarajan (1984) used both questionnaires and interviews within their exploratory research linking managerial characteristics to business units strategy effectiveness in regard to strategy implementation. Similarly, Geringer and Herbert (1991) used pre-tested questionnaires and semi-structured interviews within their assessment of international joint ventures performance, which supports the notion of appropriateness and fit (Quinlan, 2011).

### 4.5 RESEARCH METHODOLOGY

Marketing research is a firm's communication link with the environment and helps in their strategic planning, problem-solving and control (Churchill, 1976). Research should have a clear purpose and set of objectives that a researcher can investigate, such as finding answers to a particular question or number of

questions (Saunders et al., 2007). In essence, research is gathering information to answer questions that solve problems (Booth et al., 2003). It involves the collection and analysis of data, the ability to interpret that data and to discover facts for the purpose of and to satisfy organisational objectives (Quinlan, 2011).

#### **4.5.1 The Challenge of Mixed Methods Research**

The challenge for mixed methods researchers is the condemnation expressed by the research purists; researchers who do not fundamentally believe or support other philosophical positions. Interpretivists or social constructivists discard positivist perspectives as they contend that their position holds superiority over positivism (Guba and Lincoln, 1989; Lincoln and Guba, 2000). As purists, they assert that multi-dimensional realities which do not consider time or context are not covered. They assert that research is value-bound and, as a result, it is impossible to distinguish between cause and effect. Explanations are generated inductively from the data and the researcher cannot be detached from reality (Guba, 1990). Both sets of purists view their paradigms as the epitome for research and their assumptions are either implicitly or explicitly supported under the guise of the compatibility thesis (Howe, 1988), which posits that qualitative and quantitative research paradigms, and any other methods (Denzin, 1978), cannot and should not be mixed.

The next section will discuss the reliability and validity of mixed methods research in light of the challenges posed by both sets of purists (Guba and Lincoln, 1989; Lincoln and Guba, 2000).

#### **4.5.2 Reliability of Research**

Reliability refers to the degree that the research tools which are used within one study can be applied to a similar study elsewhere and will yield similar results. Reliability can only be assessed if the measurement will yield similar results on other occasions, if similar observations are experienced when conducted by other researchers and finally if there are sufficient levels of transparency which will enable intelligent use of the data (Easterby-Smith et al., 2002). Firstly, this study had previously undertaken a pilot study stage, which enabled me to address any inherent issues that came to light. Secondly, I used questions that had been tested previously, either within the exploratory pilot or within other studies. Robson (2002) posits that there are four threats to reliability:

1. Subject or participant error - this is where the results may fluctuate depending upon the environment where the questionnaire has been completed (Saunders et al., 2007).
2. Subject or participant bias - this may result from where respondent wanted to be seen in a positive light or by giving answers which they think are correct but which are inconsistent within their own beliefs.
3. Observer error - this is where the interviewer may use different approaches within the interview process, which may yield different responses (Saunders et al., 2007).
4. Observer bias - this is where the researcher interprets the results in accordance with their own subjective views and beliefs.

These potential pitfalls were avoided in four different ways: (1) the questionnaires were posted or delivered to the participants' homes or places of work. They were asked to complete the questions at home or in a suitable environment where they would not get disturbed (see Appendix B for the ques-

tionnaire); (2) the use of a mixed methodology enabled me to offset any potential bias; (3) I undertook a semi-structured interview process where the same baseline questions were asked of all participants, which ensured a degree of consistency; and (4) the transcripts were reviewed by the respondents themselves in order to determine accuracy of translation.

### **4.5.3 Validity of Mixed Methods Research**

Hamersley (1998) contends that validity can be derived through the degree of relevance, and relevance is the value that the research attaches to the research itself, the value it will offer to the community being researched and the value to its readers. Saunders et al. (2007:101) suggest that validity is concerned with “whether the findings are really about what they appear to be about”. Saunders et al. go on to argue that there may have been issues surrounding the research design which may inadvertently have been built into the research process. The question of research robustness is often linked to validity. I posit that this study is relevant, robust and valid. As the research questions, methods and philosophy are aligned, the study will offer a great insight into the issue of SPP which is under investigation and should successfully seek to find solutions.

#### **4.5.3.1 Quantitative Validity**

Within the context of any research there is an ongoing debate regarding validity. The significance of validity has been established within the literature (Campbell, 1957; Campbell and Stanley, 1963). Onwuegbuzie (2003) has presented 50 different threats to internal and external validity which may occur throughout the various research design, data collection, data analysis and data interpretation stages of the quantitative research process. Shadish et al. (2002) built upon Campbell’s previous works and categorised research validity into four major types: statistical conclusion validity, internal validity, construct validity and external validity.

Other scholars have also discussed validity within a quantitative research setting (Campbell, 1957; Campbell and Stanley, 1963; Bracht and Glass, 1968; Cook and Campbell, 1979; Messick, 1989, 1995; Smith and Glass, 1987). In order to mitigate some of these threats, I, as researcher, attempted to collect data in a systematic and unbiased way, where the respondents were able to answer questions within a value-free environment and where they were not be exposed to any detrimental external influences.

#### **4.5.3.2 Qualitative Validity**

Within qualitative research, the essence is to capture the experiences of people. Denzin and Lincoln (2005) argue that ‘experience’ is created within the social text written by the researcher. This is where the dichotomy arises; it relates to the inherent problem of interpretation and representation. There is the inescapable link of duality, the link between the researcher and the respondent. There is also an inherent problem within the context of translation; it is the correlation between the person who experiences the phenomenon and the researcher who decodes the text which makes translation problematic. Denzin and Lincoln (2005) suggest that the terms of validity, generalisability and reliability in relation to qualitative validity should be rethought. In relation to qualitative validity within the construct of qualitative research, the scope has been determined by Maxwell (1992), who postulates that there are five types of validity in qualitative research:



1. **Descriptive Validity:** Factual accuracy of the account as documented by the researcher.
2. **Interpretive Validity:** The extent to which an interpretation of the account represents an understanding of the perspectives of the underlying group and the meanings attached to the members' words and actions.
3. **Theoretical Validity:** The degree to which a theoretical explanation developed from the research findings is consistent with the data.
4. **Evaluative Validity:** The extent to which an evaluation framework can be applied to the objectives of the study, as opposed to a descriptive, interpretive or explanatory one.
5. **Generalisability:** The extent to which a researcher can generalise the account of a particular situation, context or population to other individuals, times, settings or contexts, differentiates internal generalisability from external generalisability, with the former referring to the generalisability of a conclusion within the underlying setting or group, and the latter pertaining to generalisability beyond the group, setting, time or context.

In order to address this issue, I showed copies of the transcripts to the relevant respondents to ensure that there was an accurate translation of their words. Secondly, the adoption of a mixed methods research approach has the capacity to integrate both qualitative and quantitative approaches, which display complementary strengths yet no corresponding weaknesses (Brewer and Hunter, 1989; Johnson and Turner, 2003).

#### **4.5.4 Ethical Deliberations**

Ethics is defined as a code of behaviour which is appropriate to academics and the way in which they conduct their research (Wells and Matthews, 1994). Wells and Matthews also recognise that the degree of appropriateness may well vary from one person to another, and the degree of ethical positions will vary. Zikmund (2000) posits that social norms will dictate the types of behaviour that a person will adopt within a particular situation. According to the Market Research Society (2012), there are ten principles that should make up a code of conduct which will underpin the researcher's ethical consideration. Saunders et al. (2007) argue that privacy is the cornerstone of ethical consideration and this position is consistent with the Market Research Society's postulations.

1. Researchers shall ensure that participation in their activities is based on voluntary informed consent.
2. Researchers shall be straightforward and honest in all their professional and business relationships.
3. Researchers shall be transparent as to the subject and purpose of data collection.
4. Researchers shall respect the confidentiality of information collected in their professional activities.
5. Researchers shall respect the rights and well-being of all individuals.
6. Researchers shall ensure that respondents are not harmed or adversely affected by their professional activities.
7. Researchers shall balance the needs of individuals, clients and their professional activities.
8. Researchers shall exercise independent professional judgement in the design, conduct and reporting of their professional activities.
9. Researchers shall ensure that their professional activities are conducted by persons with appropriate training, qualifications and experience.
10. Researchers shall protect the reputation and integrity of the profession.

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I was able to address the main conditions suggested by the Market Research Society through seeking consent on the questionnaire and an explanation prior to acceptance about the nature of the research. Confidentiality was explained, as was how the data would be used and stored (see questionnaire in Appendix B).

The next section will look at the data collection methods used within this study.

### **4.6 DATA COLLECTION METHODS**

Researchers within the mixed methods paradigm collect data in order to address the research questions (Creswell, 2007). The data collection methods need to fit the mixed methods design of the study (*ibid.*) and, in this context, this study has adopted both quantitative and qualitative data, which is consistent with the data collection methodology

#### **4.6.1 Research Aims and Objectives**

The aims of this study are to investigate what determinants impact on SPP amongst B2B sales professionals, establish where the LOC resides and develop a framework for SPP. The study aims to uncover which factors are inhibiting or influencing a salesperson's ability to deliver SPP on a consistent basis and the relationships that these determinants have within the framework which can be used as a diagnostic tool. The research aims to build upon the existing body of knowledge in order to contribute new knowledge, as noted in Table 1.1. I also wanted to attain a greater and more in-depth understanding of this phenomenon as a practitioner. My aim was to gain new knowledge which could be applied as a practitioner, as well as building upon academic theory. In summary, the aims can be condensed into practice and theory:

**Practice:** The study aims to contribute to the B2B sales profession via its contribution towards improved SPP. It should provide organisations and practitioners with an in-depth understanding of the profile of a sales peak performer and provide an understanding of how they can create an environment which is conducive to SPP.

**Theory:** The research aims to generate theories which can improve a salesperson's ability to perform at SPP level, particularly through aiding strategic decision-making for businesses which employ B2B salespeople.

Quinlan (2011) suggests that research is a process which has a framework that is sequential and logical, as depicted in Figure 1. A research process which appears on the surface to be logical and sequential in its creation can be a misleading proposition, as the process may be iterative and somewhat unsystematic - as a consequence of these iterations, the thread of the research is not necessarily linear. Saunders et al. (2007) describe the research process as an onion which has multiple layers, and beneath each layer of the onion the next part of the research process is exposed. The outlying layer of the process examines the philosophical position that the researcher adopts and the direction that the researcher will undertake (i.e., positivist, interpretivist or pragmatist). The second layer identifies the research (methodology) approach (notably a deductive or inductive approach). The research approach relates to the philosophical position one undertakes in terms of scientific methodological stance. The remaining layers look at the strategy or research design, which leads onto timeframes and data collection. Both Saunders et al. (2007) and

Quinlan (2011) agree that the philosophical approach should be aligned to the research methodology and that this philosophical perspective will be interwoven throughout the research and should fit with the philosophical position.

There were different research methods at my disposal. One method was action research, which relates to the actors (individuals) who operate within a professional environment on a day-to-day basis and whose primary objective is to understand how to improve their actions. It is about understanding what underpins their professional actions within their own organisation. This is in contrast to other types of research which are often performed within another organisation. Action research within B2B personal selling is grounded within the working lives of salespeople as they experience them. According to Carr and Kemmis (1986), action research can be used for the following purposes:

- To understand one's own professional practice
- To understand how to make one's professional environment better.
- To develop a greater understanding and insight of how to accommodate outside change in one's practice.
- To gain the ability to understand how to change the external in order to create a better professional practice.

Action research was rejected as a data collection method, because working within the dynamic complexities of one's own organisation would present difficulties in maintaining a degree of objectivity, as the onus would be on the self-reliance of the researcher and the ability to avoid any inherent bias. A researcher might experience difficulties regarding detachment, as he/she would have been tainted by the culture, values and beliefs of the organisation and, as a consequence, there could be a high level of bias associated with the collection and analysis of data, which could leave a researcher exposed to criticism regarding the reliability and validity of the research.

The methods which are utilised will largely depend upon their level of appropriateness and the capacity for the data collection method to answer the research questions. Researchers have a propensity for bias and an orientation towards a particular data collection methodology. Quinlan (2011) contends that a researcher should use techniques that will provide the most useful data. In this study, the data which is most appropriate would be obtained from using a mixed data collection method, as noted previously.

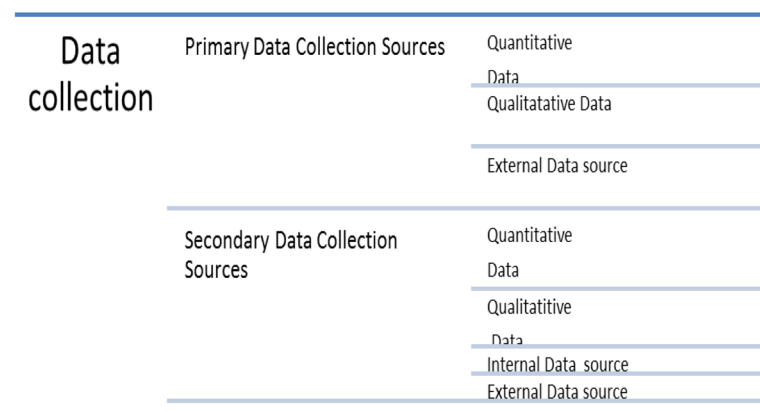
The key decision that a researcher has to make is which data collection instrument or tool is most appropriate and to design such an instrument (Cohen et al., 2007). This section will examine the data collection methods that will be used within this study. The validity and suitability of the research project will be underpinned by the ability of the data collected to address the research problem and by the philosophical predisposition of the researcher (Creswell, 2007; Quinlan, 2011).

Data collection essentially falls into two categories: primary and secondary. Primary research data is generated by the researchers themselves and secondary data examines data which already exists and is from secondary sources (Saunders et al., 2007). There is a distinction between primary and secondary sources which is not always obvious (Quinlan, 2011). Data makes reference to facts that have been collected through various means. Facts are perceived truths and verification that a stated proposition is accurate. Facts that have been measured and recorded within the context of a business research project will be interpreted and decoded by the researcher in order to offer new perspectives or meanings in regard to business problems and furnish the researcher with new information. This new information will enable a business to make decisions or to answer a research question. The process and collection

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of data becomes invaluable because it provides specific evidence in order to substantiate and support an outcome. It also furnishes the researcher with information which will enable other researchers or businesses to solve problems which may be adversely affecting and impacting upon their organisation. As noted previously, I adopted a pragmatist philosophical perspective which is aligned to the mixed data collection methodology. Creswell (2009) suggests that mixed methods data collection will always include a combination of quantitative and qualitative methodologies. Qualitative data consists of at least three components, interviews, observations and documents, or a combination of them (LeCompt and Preissle, 1993; Mason, 2002; Patton, 2002). This is in contrast to quantitative data collection, which consist of questionnaires and interviews (Gall and Borg, 2006; Johnson and Christensen, 2008; Teddlie and Tashakkori, 2009). There is a distinction between the two data collection methods. Quantitative strategies focus on the generation of empirical data (numbers), which may be analysed statistically. This is in contrast to qualitative methods which collate data through narratives and are analysed thematically. This study uses a combination of both primary and secondary research methods (see Figure 2).

Figure 2. Data collection sources  
Source: Author.



### 4.6.2 Primary Data Collection Sources

Primary data collection is fundamentally concerned with the collection of original data. Data which has been specifically captured for a particular research project, business case or event in which an organisation may derive data which will aid in the solving of a business challenge or answer a research problem. According to Churchill (1976), primary data is originated by the researcher for the purpose of the investigation in hand and it is this purpose that distinguishes it from secondary data which already pre-exists and has been collected for a previous purpose which was not directly linked and is unrelated to the current work. A primary source of data provides original information or evidence and is regarded as the first evidence of a particular phenomenon being recorded and observed (Quinlan, 2011).

Primary research has numerous advantages; it is versatile and enables a researcher to collect data from multiple sources. Primary resources can consist of and include letters, documents, scales, interviews, completed transcripts, reports, newspapers, surveys and videos. Whilst this list is not exhaustive, it is

indicative of what type of data can be utilised within the context of primary research. A primary source of research is where a researcher has had direct experience of an event, and it “is a first hand-account of an experience or a phenomenon by a person who has had the experience or experienced the phenomenon” (Quinlan, 2011:244). In this context I, as researcher, will be collecting data from sales professionals via a survey which will use semi-structured one-to-one interviews and questionnaires.

### **4.6.3 Secondary Data Collection Sources**

Unlike primary research data, secondary data is concerned with collecting information that pre-exists and has been collected for other purposes. Secondary data sources are often described as arising from ‘desk-top’ research. Desk-top research has been referred to in this way because it relates to the activities involved in collecting data whilst sitting at a desk. Quinlan (2011) suggests that secondary data is obtained from secondary sources, unlike primary data which has been created by the researcher. Secondary data has been gleaned from primary sources. It does not provide original data but reflects upon and comments upon second-hand information. The data makes reference to information or evidence published within primary sources (Quinlan, 2011). Secondary data collection is significantly more cost advantageous than primary data, and it has the benefit of economic time utility when compared to primary data source collection, which may take a considerable length of time to collect and involve greater cost implications. Secondary data collection can lead to unexpected and unplanned new discoveries; Dale et al. (1988) attributes the link between smoking and lung cancer as an example.

Secondary data can consist of documentary material such as written and non-written transcripts, newspapers, databases, videos, recordings, government publications, surveys and statistics. This is not a complete or exhaustive list, but it is a further insight into the instruments used to collect secondary data. Sometimes, the collection of secondary data alone may be sufficient and provide enough insight for a researcher (Churchill, 1976). The problems with secondary data are acute in terms of context, timeframe and accuracy. The context by which secondary research is undertaken and defined potentially stimulates inconsistency, incompatibility of data and inappropriateness of measurement. Churchill (1976) argues that secondary data is ill-suited to solving problems for three reasons: units of measurement, class definition and publication currency. He suggests that research may be conducted within units that are different to which the current research is being expressed and, as such, this renders the data inappropriate. Data presented over extended periods may have different meanings which may no longer be relevant or useful. The question of accuracy presents a concern, as it questions the validity of the secondary data and context to the overall research project. Using both primary and secondary data enables a researcher to collect data from multiple sources. Primary data is concerned with collecting data from original sources, where a researcher has had first-hand experience of a particular event or phenomenon. A secondary data source utilises data which already exists.

### **4.6.4 Summary**

The research investigation into SPP will use a combination of primary data, surveys, interviews, questionnaires, online discussion groups reports, and also secondary resources through the use of reports, articles and literature relating to SPP, the determinants that contribute to this phenomenon and the LOC. However, the methodology is based on a survey which, according to Easterby-Smith et al. (2010), is the technique used to enquire into a specific situation. The survey strategy is easily understood and perceived

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to be authoritative (Saunders et al., 2007). I, as the researcher, will collect data in a concurrent format which, according to Creswell (2007), is where both qualitative and quantitative data can be collected simultaneously (concurrently).

The literature relating to SPP is relatively scant and it has received minimal attention, so in this context focusing on secondary data collection exclusively would have proven to be inadequate. It would not have been valid or have provided sufficient information, data or new knowledge in order to develop a sufficiently robust platform to base any meaningful results on it. This meant that it would be necessary to collect data from suitable primary sources which would specifically address the research question.

In order for data to be valid it must represent that which is being presented (Quinlan, 2011). In essence, the data collection methods used must be able to measure what is being asked within the context of the research. This study is both deductive and inductive in nature, seeking to develop causal relationships, correlations and explanations by adopting a mixed methods approach utilising both quantitative and qualitative data, thematically analysed and statistically interpreted. In order to achieve this objective, an extensive survey was carried out and participants were randomly selected from all parts of the UK. The population size was 500 B2B sales professionals.

In addition, I conducted nine face-to-face semi-structured interviews. The nine interviews were deemed to be appropriate, as noted by Mason (2010) who contends that qualitative samples should be large enough to ensure that most (if not all) of the perspectives that might be important are uncovered (*ibid.*). Mason also suggests that in the event that the sample size becomes too large, the data becomes repetitive and ultimately surplus to requirements or, as described by Glaser and Strauss (1967), reaches the point of saturation, which is where the collection of new data does not reveal any further insights regarding the subject under investigation. Within qualitative research studies there is the propensity for the size of the research to be much smaller than those used in quantitative studies. According to Ritchie et al. (2003), there becomes a point of diminishing return within a qualitative study, where additional data does not necessarily lead to more information. In regard to this research project, similar themes were reoccurring which led me to conclude that further interviews would not add any new insights. Mason (2010) argues that the frequency of the data is not as important within qualitative research, as a singular occurrence of data can potentially be as useful as multiple pieces of data in understanding the subject matter, because qualitative research is concerned with meaning and not making generalised hypothetical statements (Crouch and McKenzie, 2006).

Due to the extensive population, it would appear on the surface to be expedient and economical to employ secondary data collection methods exclusively; however, this method alone would not lend itself or facilitate me the ability to address the research question due to the inherent lack of current data. As noted by Churchill et al. (1985), this area lacks any empirical validity. However, through the literature review there is a clear understanding that secondary data can be a useful, relevant and appropriate tool to use when it is used in conjunction with primary sources (Saunders et al., 2007). In this instance, secondary data sources may not be contextually appropriate or a suitable fit for this research project in isolation. However, as it does not enable me, the researcher, to address the research question or support the validity of the research, secondary data would have been collected principally for another purpose, which means that it is unlikely to fit with the problem which has been defined (Churchill, 1976). However, secondary data was useful when comparing data previously collected and it enabled me to triangulate the findings (Saunders et al., 2007) and it is in this context where the secondary data will add value to the overall research project. This is consistent with the advantages determined by Creswell (2007). The method that I, as researcher, will adopt within this study engages both primary and secondary data

collection methods. The data collection process here is not a question of which method is better, but it is concerned with suitability and validity. The next section will explore research and data collection methods and examine which data collection methods will be used, with a justification as to why the methods were selected.

## 4.7 RESEARCH AND DATA COLLECTION METHODS

The following section will examine the various data collection methods and techniques that a researcher can employ whilst carrying out a research project. According to Quinlan (2011), the researcher is only limited by their imagination and the context of validity in terms of the varieties used within data collection

Research questions are concerned with data which specifically focuses on the research question; it ensures that the research question is satisfied. There is a systematic and cohesive approach to resolving the question which enables a researcher to develop patterns and themes accordingly. As an antecedent to try and understand which data collection and analysis methods to use, it is important to understand the purpose of the research, its scope and the nature of the problem that a researcher is trying to investigate along with the researcher’s own philosophical predisposition and ‘fit’ (Quinlan, 2011).

*“Research is seeking through a methodical process to add to one’s own body of knowledge and that of others by the discovery of nontrivial facts and insights” (Howard and Sharp, 1983).*

In this context, I developed a series of research questions which will seek to fill research gaps and extend new knowledge.

1. What are the determinants that contribute to SPP amongst B2B sales professionals?
2. Where does the LOC reside in relation to SPP? Does the ability to perform at SPP level depend upon the ILOC or upon the ELOC?
3. What is the definition of SPP?
4. What is the framework for SPP?

### 4.7.1 Research Methods Used Within the Study

Table 4.1 sets out the data collection methods used within this study.

*Table 4.3. Data collection methods*

Data Collection Method	Objective of Research	Data Type	Data Collection Instrument	Data Analysis	Interpretation of Data
Quantitative data collection	Examine determinants	Primary data	Self-administered questionnaires	Statistical analysis	Objective
Qualitative data collection	To develop themes and concepts	Primary data	Semi-structured interviews, articles, journals, books, internet, conferences, databases	Thematic analysis	Subjective

#### 4.7.1.1 One-to-One Interviews

I personally conducted nine one-to-one face-to-face interviews with appropriate and consenting interviewees. The purpose of one-to-one interviews is to collect rich and insightful data. The interviewer has the ability to explain the nature of the research in detail, so that there is clarity and a good understanding from the interviewee. This enables the researcher to have a more meaningful discussion.

I asked a series of questions regarding this research and recorded their responses. Audio methods of recording the interviews were used and the recorded data was transcribed at a later date. Transcribing relates to the typing-up of the recorded voices into transcripts which represent an accurate record of the interviews (Saunders et al., 2007). The nine transcripts were used at a later date for data analysis. The process ensured that the interview was a fluid and coherent dynamic process which was not subjected to any interruptions. Within the context of a one-to-one interview, a researcher has the advantage of being able to develop a rapport with the interviewee which enables the research process to become more socially engaging and, as a consequence, develop a more cooperative and responsive interviewee. Interviews have a tendency to be a relatively lengthy process and there is an inherent risk associated with one-to-one interviews which relates to researcher bias. This is where a researcher may try and influence the interviewee and attempt to lead the interviewee in answering the question. This may be a conscious or subconscious decision on behalf of the researcher (Saunders et al., 2007).

#### 4.7.1.2 Postal Questionnaires

I created a questionnaire (see Appendix B). The questionnaire was designed to address the research questions. Questionnaires are a very popular way of collecting data, particularly for large-scale surveys and, in general, are an economic and efficient way of gathering information. They are documents that contain a number of questions which respondents have to complete by themselves (Drever and Munn, 2004). The questionnaire is a highly structured data collection instrument (Quinlan, 2011).

Respondents are required to systematically answer a set of predetermined questions. A researcher has to decide and define the structure and nature of the questionnaire, what data is required and to structure the questionnaire so that it may elicit the appropriate answers to address the research questions. The questionnaire designed for this study was made up of closed questions. Closed questions require a pre-determined set of responses, such as 'agree' or 'disagree', 'yes' or 'no', or they indicate a degree of preference or agreeableness on a Likert scale. The respondent will tick the appropriate box that responds to the question presented. Coding responses within closed questions is less complex. Postal questionnaires were sent to respondents requesting their participation within a survey, along with a covering letter explaining what is required, the nature of the research and how they should complete the process. Three hundred and fifty questionnaires were posted. The challenge arises in relation to the respondents' level of understanding and also in relation to the response rate, as this method historically receives a low response rate and can be very protracted regarding timescales.

#### 4.7.1.3 Drop and Collect Questionnaires

I also used the 'drop and collect' process (in addition to the 350 postal questionnaires sent out). In total, 150 questionnaires related to this process, where I dropped off a questionnaire (see Appendix B) and arranged to return in order to collect it. This process has a tendency to yield a higher response rate



compared to postal questionnaires. However, this process is extremely time consuming and can become cost prohibitive.

#### **4.7.1.4 Scales**

Scales are a technique used for the collection of data and commonly used for the measurement of attitudes. Scales are used to generate quantitative data (Quinlan, 2011). A multitude of different scales were used in this research, such as Likert scales, item, rank and semantic differential scales. They are all different, however, the research design and questions determined the type of scale to be in this study within the questionnaire, and the questions were designed to address the research questions (see Table 4.2).

#### **4.7.1.5 Summary**

I, as the researcher, employed a variety of different data collection methods which were consistent with the philosophy of the pragmatist and in keeping with the mixed methods research methodology (Onwuegbuzie and Johnson, 2006). It was argued that mixed methods research involves combining complementary strengths and non-overlapping weaknesses of quantitative and qualitative research methods. However, when considering which data collection method would be the most suitable or appropriate, there appeared to be no single best data collection method. There are some data collection methods which are deemed more appropriate than others. Quinlan (2011) argues that there should be only one stipulation or constraint within the data collection process, which is that the data collection methods must be valid and they must fit the research study. The appropriate methods chosen must be able to answer the research question (Creswell, 2007). Mixed methods were employed in this research project, providing the ability to use one or more sources when conducting the research. The data methods chosen will enable the research to stand up to external scrutiny and evaluation; it will also demonstrate the reliability, validity and robustness of the research. The data collection process will also enable me to confer legitimacy upon the knowledge acquired as being valid (Brewer, 2007). Researchers need to understand the population that they intend to investigate in terms of size, scope and demographics.

#### **4.7.2 Justification for the Data Collection Method Used**

During the course of this work, I considered a variety of different data collection methods and subsequently adopted a mixed methods style. This was aligned in accordance with my own philosophical disposition (which is pragmatist) and the way in which the development of the research had been structured. This particular piece of research is theoretical and was tested through both objective and subjective observations (Gill and Johnson, 2002), which lends itself to deductive and inductive research. This is consistent with the realms of pragmatism, which suggest that the social world is viewed externally and subjected to measures which are objective (Easterby-Smith et al., 2010). The assertion is that research methodology supports the data collection methods (Quinlan, 2011), which means that there must be some congruency between the research philosophy, methodology and data collection. According to Easterby-Smith et al. (2010), there are three reasons for understanding and underpinning the research design in accordance with the philosophy:

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1. The philosophy provides clarity towards the research design.
2. It enables a better understanding of which methods work and are best suited.
3. It helps to identify and create the research design.

Table 4.4. Questionnaire - data sources used and scales adopted

Subject	Questionnaire Model	Source	Statistical Analysis
<b>Personal Determinants</b>			
Motivation - self-determination	Self-determination scale	Sheldon (1995)	Likert scale
Motivation - self-efficacy	Self-efficacy (general)	Schwarzer & Jerusalem (1995)	Likert scale
Personality 5-factor model	NEO five factor inventory - test book	Costa & McCrae (2003)	Likert scale
Personal brand	Personal branding	Adapted Australian Institute of Management (2012)	Likert scale
<b>Organisational Determinants</b>			
Organisational culture	Organisational culture assessment instrument	Cameron & Quinn (2000)	Mean averages
Reward & compensation	Reward programmes, initiatives & compensation	Adapted from Society for Human Resource Management website	
Leadership style	Multifactor leadership questionnaire	Avolio & Bass (1995)	Scale
Training & skills			
<b>Symbiotic Determinants</b>			
Goal setting	Goal setting	Locke & Latham (1984)	Likert scale
Emotional intelligence	Emotional intelligence	Adapted from Goleman (1995)	
<b>Locus of Control</b>			
Locus of control		Rotter (1966)	

During the main study I used various methods for collecting data: a self-administered questionnaire, semi-structured interviews, literature review and an online discussion group; the latter aided the development of the self-administered questionnaire. The questionnaire was designed in light of the research questions and a respondent's ability to answer the questions. Questionnaires are a well-liked and accepted way of collecting data and, in particular for large-scale surveys, they are an economic and efficient way of gathering information. Questionnaires generally are highly structured data collection instruments (Quinlan, 2011). In addition, I conducted nine one-to-one semi-structured interviews to collect additional data which would further validate and underpin the other data collection methods used. Integral to any research is the ability to interpret and analyse the data collected. One needs to be able to understand how to analyse the data, what tools will be required in terms of facilitating the analysis and how to subsequently present the data. Data can be quantitative or qualitative in nature, and the next section will explore this in more detail.

### **4.7.3 Sampling Procedures**

#### **4.7.3.1 Populations**

The next natural and progressive step within the research process requires the collection of data from the relevant and appropriate population. Population refers to people, organisations, institutions, businesses or other entities. The term ‘population’ is defined by Easterby-Smith et al. (2010) as a whole set of entities that decisions relate to, while Bulmberg et al. (2011) define ‘population’ as a unit of study and where the population “is the total collection of elements about which the researcher wishes to make some inferences”. Quinlan (2011) describes ‘the population’ as the entire number of individual units or items relevant to the study. By whatever context population is defined, it represents a very large and significant size and number of entities. The dichotomy researchers have is in relation to the magnitude of the population. The larger the population, the more difficult and complex the process of research becomes. A survey of the entire population is known as a census and for the vast majority of research this would be prohibitive, inappropriate and impracticable in relation to time, money and resources. Due to the constraints outlined above, researchers have to revert to reducing the size and scope of the population and thus survey a sample of the total population. In this context I used a population of 500 B2B sales professionals as the sample size.

Easterby-Smith et al. (2010) assert that the term ‘sample’ refers to a subset of entities from which evidence is obtained. As discussed previously, the research methodology must be appropriate and fit the nature and scope of the research, enabling a researcher to produce reliable and robust data to support the research objectives. Cohen et al. (2007) believe that good research is determined by implementing the most suitable methodology and instruments and by adopting the most suitable strategy. Sampling is a complex process and one which requires clarity and careful consideration, as it is critical to the results and outcome of the project. A sample enables the researcher to make inferences regarding the whole population as a result of the conclusions drawn from the analysis. Churchill (1999) suggests that the simpler the definition of the target population, the greater the chance of identifying the incidence within a sample. Incidence is defined as or refers to the percentage of the population or group that qualifies for inclusion within a sample using predetermined criteria. Bulmberg et al. (2011) identify five sequential steps which require consideration and to be answered prior to deciding upon which sampling method to adopt:

1. Decide on the target population.
2. Define the parameters of interest.
3. Understand the sampling frame.
4. Select an appropriate sampling method.
5. Determine the sample size.

#### *Target Population*

The sample population, as alluded to previously, must be specific and relevant to the scope and nature of the research. The entities within this population must be able to address the research question. Churchill (1999:509) suggests that the population is defined as “the totality of cases that conform to some designated specification”. In other words, the subjects must be relevant and appropriate in terms

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of the population's operational fit to meet the research objective. The target population identified for this study were B2B sales professionals.

### ***Parameters of Interest***

Population parameters can be described as 'summary descriptors' (Bulmberg et al., 2011). This relates to the variables of interest such as the rate of incidences, or the proportion or the percentage of a particular population who have behaved, acted or displayed attitudes or tendencies towards a phenomenon. Parameters also refer to understanding the variances and means of data in relation to the area of research being carried out. These parameters then become the variables by which statistics are derived and the basis upon which the researcher draws inferences. The data to be collected and subsequently analysed will depend upon the type of questions defined. Bulmberg et al. (2011) state that the choice of parameters of interest will determine and dictate the sample size and type (see questionnaires in Appendices B and C).

### ***Sampling Frame***

A challenge arises within the research process in regard to the size and scope of the research population. Clearly it is not practicable, feasible or appropriate to interview, survey or question the total population under scrutiny. This means that decisions have to be made as to what proportion of the population will be required to be sampled, in order for the researcher to have sufficient numbers for statistical relevance. Bulmberg et al. (2011) contend that the larger the sample the greater the reliability that can be given to the findings of the research. They also suggest that a minimum of thirty cases would need to be considered if a researcher plans to carry out any form of statistical analysis. However, in comparison, Henry (1990) recommends that if a population is less than fifty cases, then this would not be appropriate or suitable for probability sampling.

A sampling frame refers to a list of those entities or elements of interest, from which a sample can be derived (Churchill, 1999; Easterby-Smith et al., 2010; Bulmberg et al., 2011). It enables the researcher to develop a strategy that will meet the research objectives and answer the research questions. In order to facilitate this, the researcher will need to apply appropriate sampling techniques. These can be broken down into two categories: probability and non-probability sampling. Researchers have to decide which sampling method is the most appropriate to use. Henry (1990) postulates that using sampling methods enables the researcher to obtain a higher level of accuracy when compared to a census.

Probability sampling ensures that each entity has the opportunity or the probability of selection in equal measure, which is pre-determined and identified. Saunders et al. (2007) suggest that it is possible for a researcher to estimate statistically the characteristics of the population from a sample, and this methodology is closely associated with surveys. This process enables the researcher to generalise their findings. In contrast, non-probability sampling has no way of appraising the probability that any entity will be included, and has less statistical validity to enable generalisation. Each of the following stages will be discussed in turn (see Figure 2). This study used a combination of random sampling for the 500 questionnaires and purposeful sampling for the nine one-to-one semi-structured interviews.

#### 4.7.3.2 Probability Sampling

##### *Simple Random Sampling*

Simple random sampling is where each entity has an equal chance of being selected, by the utilisation of a simple random table (Saunders et al., 2007). These random tables are generated manually. Randomisation ensures that there is a large degree of objectivity and it also avoids the potential of bias. Random samples can be quick and efficient. A well-crafted and executed random sample can give results that are equal to and potentially more accurate than if the researcher had tried to survey the entire population (Neuman, 2009).

#### 4.7.3.3 Non-probability Sampling

##### *Purposive Sampling*

Purposive sampling is a technique that refers to the selection of participants who meet specific requirements (Saunders et al., 2007). The respondents must meet pre-set criteria for the purpose of the research. Candidates who meet the criteria will be used and those who do not will not be used within the sampling process. In this study, nine respondents were identified as being suitable, either by qualification, experience or practice.

The question of sampling is largely dependent upon the nature and scope of the research being carried out. Saunders et al. (2007:150) contend that the choice of sampling techniques is largely dependent upon the “feasibility and sensibility of collecting data that answers the research question”. Within the context of this study, a simple random sample was used for the 500 questionnaires and purposive sampling was used for the interviews. As previously asserted by Neuman (2009), a well-crafted and executed random sample can give results that are equal to and potentially more accurate than if a researcher had tried to survey the entire population. Evidently, it is not feasible or practicable to involve all members of the population (Gill and Johnson, 2002) and, as a result, the selection process must reflect a true representation of the population. This in turn enables a researcher to generalise their findings and draw conclusions which would give confidence and enable a more accurate portrayal of the population (*ibid.*). The Institute of Sales and Marketing Management’s database of online sales groups and large-scale sales organisations was the basis for the sample pool used to select respondents. Once the data has been collected the process of evaluation and analysis commences, and the next section will discuss appropriate methods for the analysis of both quantitative and qualitative data, along with the techniques that were selected and used.

## 4.8 DATA ANALYSIS

### 4.8.1 Qualitative Data Analysis

Qualitative research is primarily concerned with a researcher’s ability to interpret and attach meaning to language, both physical and verbal, which is articulated by the respondents. Qualitative data has been described as ‘rich data’, as it seeks to delve and examine the phenomenon deeper than if it were a piece of quantitative research. Robson (2002) postulates that the researcher has the opportunity to explore a subject in as real a manner as possible. This view is supported by Easterby-Smith et al. (2010), where

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they propose that the purpose of qualitative research is to develop knowledge about the participants through their social interactions. Qualitative data is primarily concerned with attaching subjective meaning and interpretation to a set of events being investigated and, as such, this view or interpretation will be largely determined by the researcher's own subjective perspective of reality. Easterby-Smith et al. (2010) consider that the data which researchers gather is filtered through their consciousness; as a consequence, the researcher becomes 'subjectively immersed' which does not enable them to become objectively detached from the dynamics of the research complexities. Whilst it is widely recognised and acknowledged that qualitative research is a creative process whereby the researcher is trying to gain a greater depth and understanding of a particular phenomenon, the process is subjective and, as such, will require a clear strategy (see Table 4.3) about what is collected and how to analyse the data gleaned from the respondents, as well as how to avoid any bias.

The analysis of qualitative data is complex in terms of the collection of data and its analysis. The skill of the researcher is to capture the "fullness and the richness of the data [which] cannot be collected in a standardised way" (Saunders et al., 2007:47). Complexities arise as a result of the variety of different data collection methods used, the researcher's subjectivity, the ability to draw inferences from the respondents and the ability to interpret and attach meaning.

Table 4.5. *Qualitative data methods available*

Observations	<b>Oral history</b>
<b>Interviews</b>	<b>Ethnography</b>
<b>Archival research</b>	<b>Textual analysis</b>
<b>Case studies</b>	<b>Interviews</b>
<b>Projective techniques</b>	<b>Discourse analysis</b>
<b>Focus groups</b>	<b>Narrative analysis</b>
<b>Field diaries</b>	<b>Semiotics</b>
<b>Participant observations</b>	<b>Documentary evidence</b>
<b>Content analysis</b>	<b>Visual methods</b>
<b>Grounded theory</b>	

Due to the variety of different data sources available, it reasonable to suggest that a researcher should adopt a strategy and process for analysing qualitative data to shape the direction the research takes. The researcher needs to choose an analytical approach which is fit for purpose and consistent within the pragmatist paradigm. This is where a researcher will utilise existing theory to shape the research approach, or may opt for an inductive analytical approach which will seek to develop a theory as a consequence of the research. Quinlan (2011) proposes that there are four stages to data analysis: description, interpretation, conclusion and theorisation. In the first stage, the researcher describes what is contained within the data and what is apparent within the dataset. During the second stage, the researcher attempts to interpret the data and endeavours to attach meaning to it (What is the evidence suggesting? What does it really mean?). In the third stage, the researcher seeks to develop conclusions on a continual basis, as the evidence unfolds throughout the research process and the final stage, theorisation. These stages then

revisit the previous literature to establish theories and seek to make comparisons in terms of fit. The researcher will examine if there are consistencies or inconsistencies with the previous research. The process of theorisation knits the research into the overall body of knowledge, thereby adding and contributing to knowledge (Quinlan, 2011). Within the qualitative analysis process, there are different approaches which can be applied or considered when examining the various research strategies. Whilst there may be features that appear similar on the surface, they are uniquely different and, as a consequence, they will require a different approach in order for the researcher to understand, interpret and identify emerging themes and have some form of commonality. Saunders et al. (2007) state that qualitative analysis encompasses the following four activities: categorisation, unitising data, developing relationships and categories, and developing and testing hypotheses.

## **4.8.2 Categorisation**

Categorisation involves the systematic collection and classification of data into categories which have originated from the literature and from the data which has been collated. The categories stem from emergent themes. Saunders et al. (2007:381) suggest that these categories in essence become the “codes or labels” that the researcher will use to rearrange the data. The data that is derived must fit with the research project and should be able to answer the research questions. Dey (1993) asserts that categories need to be part of a coherent and well-structured analytical framework in order for the researcher to pursue their analysis. The resultant analysis must be relevant and meaningful. During this study, I categorised findings based upon the SPP determinants.

### **4.8.2.1 Presenting Data**

Once the data has been collected, analysed and interpreted, I needed to present the data in a way that is systematic and coherent. There are inherent strengths and weaknesses regarding different analytical methods and equally how best to present the data. Cohen et al. (2007) believe that there are five ways in which to present data: by groups, individuals, issues, research questions or instruments. In this research study, the data will be presented in tables, preserving the integrity of each individual within the headings of key themes.

#### *Individual Data*

The data was collected and analysed on an individual basis. Individual data analysis is concerned with the distillation of data which has been gathered from an individual or series of individuals and presented on an individual basis (Saunders et al., 2007). This process preserves the integrity of the individual and it relays a holistic view and interpretation of individual respondents. However, the data will require constant re-evaluation and iteration in order to develop patterns and themes that subsequently emerge as a collective view.

#### *Data Issues*

Data issues relate to a specific issue or context which the researcher has investigated. Whilst this may have a purpose at specific times, it may fail to capture the wholesomeness of the other unaccounted elements of the research. According to Cohen et al. (2007) there are three components that may raise concern:

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1. The first concern relates to the integrity and ability of the researcher to offer comparisons across different individuals.
2. Secondly, the content, context and meaning may become disconnected and the data may lose sight of the relatedness of the designated issues in question, thereby losing the synergy of the research.
3. The final concern relates to omissions where the research has a predetermined criterion. There is an inherent risk that the researcher will fail to identify, capture or analyse emerging issues that have occurred as a consequence of their focus and selection of the pre-set issues.

### **4.8.2.2 Summary**

Qualitative data analysis is an integrative process whereby a researcher attaches meaning to words, textual data and documents. This type of data is subjective and the perceptions of the researcher are based upon their interpretation of the world, and these perceptions are influenced by social, environmental and economic factors. Data collection is categorised and the researcher develops patterns and themes in order to reach conclusions. The researcher is an integral part of the research process - one where they are immersed within it and, as a consequence, they have difficulty in detaching themselves from their own reality and ability to be objective. The data was analysed manually.

### **4.8.3 Quantitative Data Collection Methods**

This refers to the organisation and interpretation of measurable elements from which data is derived numerically. Quinlan (2011) contends that the convention of statistical analysis becomes an integral part of the quantitative deductive research process. The characterisation of quantitative research enables the data to be interpreted in such a way that it can be easily represented and understood through charts, graphs and tables. Saunders et al. (2007) state that quantitative data enables the researcher to illustrate the periodicity of events and to establish relationships between complex variables. In this study, the management of the quantitative data and the statistical analysis were undertaken using the statistical software package 'SPSS'. The output from the analysis enables the researcher to deduce and outline new insights that support, refute or develop a new theory. In this study, in order to gather and collate quantitative data, I employed a questionnaire (see Appendix B). This method has a perception of reliability (Saunders et al., 2007; Quinlan, 2011) and the ability to replicate, and often lends itself towards generalisability, which means that it is often given more credence within the external world.

#### **4.8.3.1 Questionnaire Design**

The questionnaire (see Appendix B) was designed in order to collect information by conducting surveys. Three different methods were used: postal questionnaires, self-administered questionnaires, and drop and collect questionnaires. The questionnaires contained different data types, namely categorical and quantifiable data, and formatting and, as the subsequent analysis is different, it is important to understand the distinction between the two datasets and how the questionnaire will support and answer the research questions.



#### 4.8.3.2 Analysing Quantitative Data

Quantitative data is defined as a form of numerical measurement. Data which is quantifiable is measurable (Saunders et al., 2007) and precise, and the researcher can assign each piece of data to a value on a numerical scale. Quantifiable data can be further sub-divided into a further two groups: continuous and discrete data.

##### *Descriptive Data*

Descriptive data refers to information which has a specific characteristic or classification, such as vehicle type, bike brand, car, van or lorry. Whilst this data can be presented descriptively, it can also be translated by ranked order.

##### *Ranked Data*

Ranked data, also known as ordinal data, ranks data in order of their position obtained within their dataset.

##### *Coding*

This study adopted quantitative, descriptive and ranked data. Regardless of the data type, the utilisation of numerical codes should be applied. According to Saunders et al. (2007), data coding enables quicker and more efficient data entry and minimises errors (see Appendix B). Different coding methods can be applied to quantifiable and categorical data. Codes enable the data entry process and recording of data. Whilst the input of data may appear to be a straightforward proposition, the challenge arises with respondents not completing the questionnaires correctly through omissions or by inaccurate entries. According to De Vaus (2002), there are four reasons why missing data occurs:

1. The respondent refused to answer the question.
2. The questions may have inadvertently been missed.
3. The respondent was unsure or uncertain of how to answer the question.
4. The data did not require a response as a consequence of question construction or syntax.

##### *Missing Values*

There is a dichotomy as to what a researcher should do when presented with missing or incomplete datasets. Missing data can be allocated a specific code and this can subsequently be excluded from the data analysis. This approach ensures that the integrity of the research remains intact. Once the data has been fully collated, statistical tests will need to be undertaken in order to test the significance of the data. In this study, I excluded questionnaires which had significant levels of missing data.

##### *Statistical Analysis*

There is a tendency within academic and business research to compare and analyse one variable to another, and to try and understand how or what has impacted on a particular phenomenon. Within the context of statistical analysis, the ability to answer these questions is based upon testing the probability of the relationship occurring by more than chance alone (Saunders et al., 2007). The use of SPSS enabled me to carry out statistical tests in order to test the probability of occurrence. This statistical analysis package

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is designed to examine the trends and significance of any relationship. There are many different tests which can be used, as depicted in Table 4.4.

Table 4.6. Statistical tests available

	Categorical Data	Quantifiable Data
Test association between 2 variables	Chi-square	Chi-square
Test difference between 2 groups	Kolmogorov-Smirnov	T-test
Test difference between 3 or more groups		Analysis of variance (ANOVA)
Strength of association between 2 variables	Spearman's rank correlation coefficient	Pearson's product moment correlation coefficient
Relationship between 1 dependant and 1 or more independent variables		Regression coefficient
Predict value of dependant variable from 1 or more independent variable		Regression equation
Compare changes longitudinally		Index numbers
Longitudinally trends determined by a series of data		Time series, moving averages regression equation

Source: Saunders *et al.* (2007), adapted by author.

### 4.8.3.3 Summary

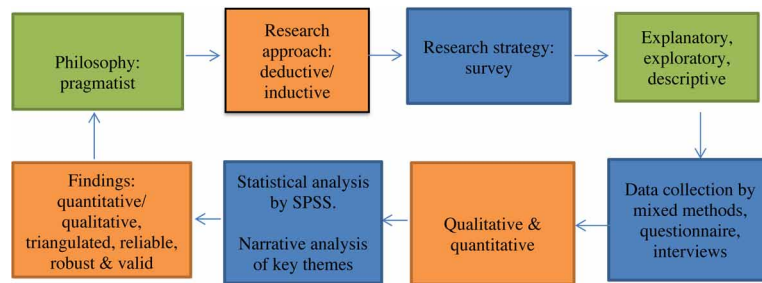
Data collection and analysis can be both quantitative and qualitative in nature. The data derived from a population is known as a sample. Within this context, I adopted both a probability and non-probability sampling method. The methods employed were appropriate and aligned to meet the research questions. Once the data was collected it required coding, testing and analysis. The data enabled me to describe and explore events, as presented within tables, graphs and diagrams in the analysis chapter (Chapter Five). The format will be influenced by the research questions (Saunders *et al.*, 2007). The process selected for the collection of data will be both quantitative and qualitative in nature, using questionnaires and interviews in order to triangulate the findings, which makes the research more robust and reliable. The mixed-methods data collection approach is uniquely placed to offset any inherent weaknesses or biases in relation to a particular data collection strategy and, in doing so, places a greater emphasis on the research validity. Saunders *et al.* (2007) suggest that it makes sense to use different methods in order to cancel out what they describe as the 'method effect'. The method effect refers to the fact that each individual methodology has challenges regarding credibility and reliability and, as such, these raise concerns as to confidence in the results. The adaptation of a mixed methods approach leads to a greater degree of confidence in the research conclusions (Saunders *et al.*, 2007).

## 4.9 ADOPTED RESEARCH DESIGN METHODOLOGY

This research is an investigation into SPP amongst B2B sales professionals and I have previously stated the research questions which require answers. I adopted methods which were the most appropriate and

best fit to ensure that the research was robust, reliable and valid. I adopted a survey approach, using more than one method in terms of gathering and analysing data. This research firstly looked at the literature in order to understand what previous scholars had reported in this field and to understand any theories or conceptual models for evaluation. Secondly, online discussion groups took place amongst B2B sales professionals in order to discuss the preliminary findings from the literature and to determine whether the literature was relevant and current within the context of the social, political and economic climate that we live in today. Thirdly, the research used a questionnaire with a sample size of 500 B2B sales professionals, using a simple random sample process. The questionnaire used a variety of different scales. Finally, purposive sampling was used for the nine one-to-one semi-structured interviews in order to develop a deeper insight into B2B sales professionals' behaviour, attitudes and traits. This adopted method ensures that the research is holistic and robust, and will be able to stand up to scrutiny from the outside world as well as academics. Figure 3 sets out the research framework adopted for this study.

*Figure 3. The adopted research method framework*



The next chapter sets out the findings and analysis of the data collection process, and presents the data which underpin the research questions. The data is presented quantitatively using tables, charts and graphs, and qualitatively through the use of key themes which are explained through narratives.

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## Chapter 21

# Personal Diary Method: A Way of Collecting Qualitative Data

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### **ABSTRACT**

*There is a growing interest towards using diaries as a tool of data collection for gathering information pertaining to consumer research. However, the bigger challenge is the qualitative analysis of the data collected through this technique. Hence, the objective of the chapter is to illustrate how diary method of data collection can be a better option than other data collection tools in cases where the informants are likely to experience difficulties in recalling past consumption experience. To delineate the steps and different types of codes used in inductive content analysis to analyze the qualitative data collected through the personal diary method, the chapter will also present an exploratory study with airline consumers using self-completion diaries about their online ticket purchasing experience followed by qualitative analyses of this information collected through diary using inductive content analysis. Each step of the content analysis will be illustrated in the full chapter.*

### **INTRODUCTION**

Everyone in this world understands the importance of using a diary in daily life. Some people use it to document their daily activities, events or track their upcoming appointments (Butcher and Eldridge, 1990). Other may use it as a Pandora box for secret information, daily work experiences and so on. Individuals often write their diaries to keep their classified information whereas others may like to publish their life history, personal experience, thoughts or feelings about an event in the form of books or articles (Kenten, 2010). For example, many biographies and autobiographies are written on business leaders (e.g., Bill Gates, Steve Jobs), management thinker's (e.g. Michael Porter), country statesman (e.g. Mahatma Gandhi), Spiritual leaders (e.g. Swami Vivekananda) and many more to convey the success, failure or

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the experiential learning of the great protagonist. In today's world where the longitudinal research plays an important role, written diaries were used as a key method for data collection.

This chapter is expected to (1) explain the meaning and components of diary method, (2) demonstrate important characteristics of diary research method, (3) explain different types of research diaries, (4) describe the advantages and disadvantages of using diaries method, (5) explain the issues involved in hiring diarists for an experiential research, (6) explain the method for analyzing diary research, (7) describe the process of content analysis for analyzing diary data, and (8) highlight the researcher's bias in diary method.

Diary method originated from the field of psychology and anthropology and then widely used in other areas such as social science (Alaszewski, 2006; Suveg, Payne, Thomassin, & Jacob, 2010; Bryman, 2015) and medical research (Freer, 1980; Coxon, 1994) to gather the real-time qualitative data obtained from the customer and patient's experience respectively. It is considered as a primary source of the qualitative data analysis. Diaries were often referred as the written materials or transcripts which were kept for further synthesis by the researcher.

Diary research has three main components such as; 1) initial interview, 2) research diary, and 3) debriefing of the interview (Alaszewski, 2006).

- **Initial Briefing:** In the first step of the diary method, the researcher provides a complete presentation of the process followed during the writing.
- **Research Diary:** This is the actual stage of diary research, where the participants engage him/her in documenting the personal experiences for a specified time and return the same to the researcher after meeting the deadlines. The researcher then read and analyzes the complete diaries for debriefing purpose.
- **Debriefing:** The last stage of a diary method deals with a complete debriefing exercise conducted by the researcher for the previously written logs. The analysis of diaries acts as resources for the debriefing interview with the participants.

## **INTRODUCTION TO PERSONAL DIARY METHOD**

Diary is a "document created by an individual who has maintained a regular, personal and contemporaneous record" (Alaszewski, 2006). Like every statistical method, the diary has certain characteristics. These are as follows.

- Diary method of data collection is periodical / sequential because, entries are made over a period (Campbell & Shlechter, 1979).
- Information collected from the diaries is individualistic. Individual record what he/she consider being appropriate and essential and may include personal events, activities, interactions, impressions, and feelings.
- It is more contemporaneous than any other method of data collection. Information is collected at the time or closes enough to the real-time when events or activities have occurred.

Management science research has acknowledged the importance of diary method as a primary source of qualitative data collection. Mostly, in this diary method, respondents were asked to write their

personal experiences/events/behavior that will be recorded over a period of time (Bowling, 2014; Wellington, 2015; Nicholl, 2010; Ohly, Sonnentag, Niessen, & Zapf, 2010; Latham, 2003; Posch, Somekh, & Altrichter, 1993; Nezelek, 2012).

## **Twelve Key Check Lists Before Conducting a Diary Research**

Before conducting diary research, every researcher should keep an eye on the below-mentioned points (Nicholl, 2010).

1. Decide the appropriateness of this research tool.
2. Decide, whether diary method will be used in isolation or in addition to other research methods.
3. Decide on their purpose – to inform or confirm other data.
4. Study the potential impact of researcher's request for the participants.
5. Decide on the content and structure you require and include in your instructions.
6. Make sure that the instructions and terminology are clear.
7. Assign particular colors and codes to highlight and differentiate between different parts of diaries.
8. Provide proper time for development and piloting of the tool.
9. Reinforce recording and support participants by personal or telephone contact.
10. Study the diaries using content analysis.
11. Keep the anonymity of all sensitive materials.
12. Consider alternative format for data collection if needed.

## **Types of Research Diary**

According to Jones (2000), the classification of personal diary method is primarily dependent on the degree of the structured procedure used in data collection process. Hence the classifications are mainly divided into two broad categories such as; 1) structured or solicited diaries 2) unstructured or unsolicited diaries (Snowden, 2015; Kenten, 2010, Jones, 2000; Jacelon, & Imperio, 2005; Mackrill, 2008).

1. **Structured or Solicited Diaries:** Solicited diaries which are often used in health science research (Milligan, Bingley, & Gatrell, 2005; Jacelon, & Imperio, 2005). It provides complete structural information about participant's daily life experiences. Structured diary has a great potential to capture the many real-time data such as; feelings, beliefs, motives and the desire of the participants in chronological order. Solicited diaries are considered to be a negotiated process between the researcher and the participant involved in writing the diary and play a role of both observer and an informant in the complete data collection process (Zimmerman, Don, Weider, & Laurence, 1977). It also provides lots of empowerment, participation, and engagement to the respondents in the research process (Meth, 2003). Typically solicited diaries are written with full participant's knowledge and are intended for specific research objective and public consumption (Bell, 2012). Solicited diaries are entirely different from other private or personal diaries which are based on individual's experiences. According to Bell (1998) solicited diaries is considered to be 'an account produced specifically at the researcher's request, by an informant or informants.' Diary method of qualitative data analysis provides tremendous benefits of capturing the complete snapshot of daily life history, but the significance of such kind of diaries can be based on the tampered participant's

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experiences (Kenten, 2010, Rijmen, Vansteel&t, & De Boeck, 2008; Bolger, Davis, & Rafaeli, 2003; Gunthert & Wenzel, 2012; Iida, Shrout, Laurenceau, & Bolger, 2012; Rickenbach, Almeida, Seeman, & Lachman, 2014). Participants record those personal experiences that had happened a long back. Therefore, qualitative data analysis using structured or solicited diaries often used in research associated with sensitive matters and provides a significant benefit of capturing the longitudinal insights rather than a cross-sectional or the snapshot of the of participant's daily life. This longitudinal method of data collection using diaries allows a significant amount of flexibility and variation in the personal stories and narratives presented by the diary writers. Unlike many other qualitative methods such as; focus group and personal interview, which provide qualitative information about the respondent for a particular time and place, solicited diary method offers a better way to deal with a more complex set of participant's daily life experiences (Meth, 2003). For example; solicited diaries are often used in health and clinical research (Webster, 2002; Milligan, Bingley, & Gatrell, 2005), where the effectiveness of the interventions is documented on regular intervals. Academic research has also used this structured diary approach with an aim to enhance the teaching and learning capabilities of the faculty and student respectively (Scanlan, Care, & Udod, 2002).

2. **Unstructured or Unsolicited Diaries:** Unsolicited diaries are entirely different from solicited or structured diaries. In an unsolicited personal diary, the participant writes his/her benefit, and usually, other people do not read the diary (Morrison, 2012). Unstructured diaries are considered to be open-ended and have very little or no guidance regarding the format and the content of the documentation process (Sheble, & Wildemuth, 2009). These are considered to be spontaneous and are written with no specified intention for external reading and analysis (Jones, 2000). It acts as a valuable resource for the Historical and biographical researcher who would like to explore the nature of the suffering. For example; in healthcare research, information regarding the health status of the patient is recorded in unsolicited personal diaries and are private. It can provide a brief overview of the patient's experience with the health care system. Unlike structured diaries, unsolicited diaries provide an alternative mechanism to deal with individual's moral dilemmas in analyzing the written narratives (Alaszewski, 2006). They provide a snapshot of the individual experiences and are very much useful in exploring cultural phenomena, spiritual insights and the emotional domain of participant's experience. Usually, the unsolicited or the unstructured diaries are intended to be private and are important to the diary writer (Allport, 1942).

## **Advantages of Using Diary Method Over Other Methods**

Several scholars have suggested the following unique uses of diaries (Alaszewski, 2006; Sheble & Wildemuth, 2009; Snowden, 2015; Alaszewski, 2006):

- Diary method facilitates access to hard-to-reach or hard-to-observe phenomena. Therefore, the problem of capturing sensitive information can be addressed through this diary approach.
- Diary helps in overcoming the memory problems (Rickenbach, Almeida, Seeman, & Lachman, 2014). It captures the real-time information regarding events and observations that might be neglected by one time recording methods because participants may view the events or experiences as insignificant.
- It is considered to be more flexible and can be used in a variety of research designs.

- Can take a variety of forms from highly structured to unsolicited
- A useful tool to study a particular type of phenomenon that would not otherwise be possible or accessible to researchers because of its temporal or situational nature.
- Increase the accuracy and validity of the qualitative research (Bartlett, 2012).
- Diary method is considered to be a more informative method of data collection than other qualitative inquiries and provides rich information about participant's feelings and experiences.
- Unlike any other questionnaire method of quantitative data collection, it is less constrained and provides a real-time information about an event or personal experiences as it happens. Participants can record their feelings and personal experiences at their convenience. Hence it is more detailed and accurate regarding activities and the context.
- Empower and motivate participants to engage in the research process actively (Bartlett, 2012).
- Diaries are more natural and written in participant's language

## **Challenges Involved**

Apart from the advantages, diary method also faces challenges in implementing the research (Nicholl, 2010; Iida, Shrout, Laurenceau, & Bolger, 2012). It requires considerable amount of time and effort in implementing and analyzing the qualitative data. Unlike any other survey method, it is difficult to synthesize the result immediately. Hence, it requires a greater amount of researcher's attention for gathering and analyzing individual responses. It is also costlier than other quantitative research approaches. Additionally, inappropriate respondent conditioning, lack of cooperation and the sampling bias may lead to data collection errors. Most of the diary research requires respondent's ability to in capturing the events (Slikker Jr & Chang, 1998; National Research Council, 2000; Iida, Shrout, Laurenceau, & Bolger, 2012). Therefore, it is difficult to recruit respondents for dairy study. Diary information may be unreliable if there is fear of personal loss or incrimination.

Before conducting any diary research, the researcher should consider the following four major issues involved in hiring diarists for the experiential research (Alaszewski, 2006).

1. **Competence:** What kinds of skills required for a person to become a diarist? What are the ways through which these skills can be addressed?
2. **Understanding:** What are the things that the diarist should know before writing the personal experiences? How to assess the understanding of the diarist? How to enhance the understanding of the participants?
3. **Motivation:** What kind of personal motives are necessary for diarist throughout the research process? What are the possible ways to assess such motivation? How to maintain and enhance the diarist motivation throughout the research phases?
4. **Incentives:** Would it be necessary to compensate the diarist for their dedication? What sort of compensation should be provided?

## **Procedure for Analyzing Diary Data**

Inductive Content Analysis: The final the most important phases of dairy research is to analyze and interpret the results obtained through the dairy method of data collection. Because the qualitative data collected from the diaries don't have any in build structure. Therefore, the next step of this diary researcher

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is to find out a way to manage such kind of raw text data. Analysis of such qualitative data and deriving patterns from a large chunks textual data set is known as content analysis. Most of the researchers use *inductive content analysis* approach to analyze such textual information (Schamber, 2000; Vaismoradi, Turunen, & Bondas, 2013) because an inductive approach provides many more advantages than other methods of data collection. These are as follows: it (1) provides a useful and efficient way to deal with the qualitative data, (2) compress all form of qualitative raw data into a summary format, (3) helps in creating a link between the research objectives and the research findings derived from a qualitative analysis, and (4) identifies patterns in qualitative data and develop certain models and theories based on the data analysis (Thomas, 2003).

There is a wide array research method (e.g., thematic analysis, grounded analysis, narrative analysis, etc.) which are used to analyze the textual data. However, content analysis is one of such method which has been widely used in analyzing the qualitative data collected from the participant's experience documented in the form of diaries. It helps in classifying the textual data into more small and meaningful phrases. Hence, *content analysis* is defined as "a structured research approach, using specified research designs and methods, to make replicable and valid inferences from texts and similar materials" (Krippendorff, 1980, Mayring, 2000). But in general terms, content analysis is defined as the "systematic, objective, quantitative analysis of message characteristics" (Neuendorf, 2002). Moreover, content analysis is exploratory in its process and predictive or inferential in intent (Krippendorff, 2004). It usually follows a defined set of procedure to make inferences from the text data file which are valid and reliable (Weber, 1990, p. 9).

Textual data collected from the diaries are being coded, and then linkages between the codes are created to derive a proper meaning out of the study. Codes used in the content analysis are categorized into three types (Bowen, 2008). Open coding is the first stage of qualitative data analysis, where the researcher reduces the complete set of textual data into controllable groups after a through reading (Strauss, & Corbin, 1990; Burnard, 1991; Santos, 2003; Moghaddam, 2006; Kh&kar, 2009; Burnard, 1991; P&it, 1996; Santos, 2003; Walker & Myrick, 2006; Hern&ez, 2009). Axial coding is a process of interlinking or identifying the relationships among the open codes created in the first stage of the content analysis (Hoepfl, 1997; Kendall, 1999; Saldaña, 2015; Kendall, 1999; Boeije, 2002; Santos, 2003; Thomas, 2006; Walker & Myrick, 2006; Bringer, Johnston, & Brackenridge, 2006; Hays & Singh, 2011). In selective coding, the researchers find out the central or the core variable in the content analysis that includes all the data and then selectively codes the text data that relates to the primary variable you have identified (Spiggle, 1994; Priest, Roberts, & Woods, 2002; Walker & Myrick, 2006; Urquhart, 2012).

## **Steps for Inductive Category Development in Content Analysis**

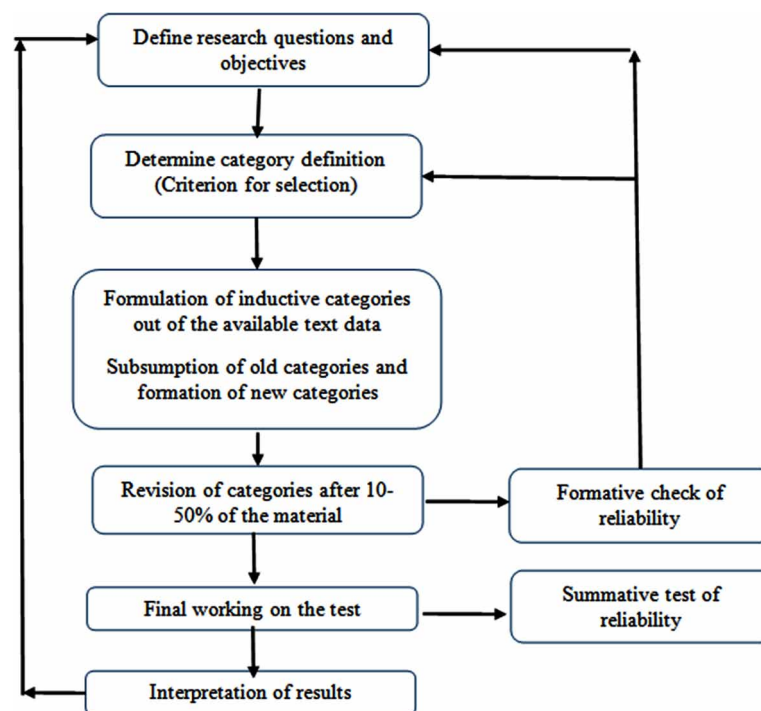
The inductive approach of forming codes and categories from a textual data is not an easy task for any of the qualitative researcher. Therefore it is very much necessary to have a concrete guideline for the category formation. Mayring (2000) has given the following procedure to derive categories from qualitative data (See Figure 1).

In each diary method of data collection, it is very much necessary for a researcher to record the following relevant information (Snowden, 2015).

1. Dates and times of meetings.
2. Views regarding the meetings conducted.

3. Complete contact details of collaborators.
4. Documentation of relevant questions, ideas and thoughts arise during the research process, which may need follow-up.
5. Points or suggestions for reading matter
6. The basis for the required changes within the study.
7. Recording of all the personal thoughts, views and feelings experienced at any point of data collection procedure.

Figure 1. Step of inductive category development adapted from Mayring (2000)



## ILLUSTRATION OF PERSONAL DIARY

### Application of Personal Diary Method in Consumers' Hedonic and Utilitarian Motives in E-Ticket Booking: A Case of Indian Airlines

In this illustration, the researcher strived to gain insights into the lived experience of consumers about their online air ticket booking experience. They incorporated Bolger, Davis, and Rafaelli's (2003) self-completion diary method to record the air ticket booking experiences of total 60 frequent air travelers. The responses recorded in the diaries were content analyzed which yielded in the emergence of eight themes. In qualitative studies, focus group and personal interviews are some of the most frequently used methods to capture responses. But, in the study, the researcher endeavored to capture the full potential

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of an instrumental qualitative data collection like self-completion diary method which is among the uncommon methods of recording lived and real-time experiences of consumers in marketing.

1. **Researchers' Background:** Along with rich exposure in airline ticket booking, the two researchers who were the part of this study had a rich domain in consumer behavior and psychology also. The backgrounds of the researchers are illustrated in qualitative studies to facilitate the readers in making inferences about the findings of the present study. Both the authors were the management professor in a leading business school in the southern part of India. For over four years, one of them was actively engaged in research work in the areas of consumer motivation and purchase behavior. Apart from this, she had an industry experience in the domain of retail analytics in one of the reputed food and grocery major in India. The organization had a geographical presence in nine zones in India. During this stint with her job entailed her to frequently travel by flight to the nine regional offices of the firm in various parts of India. On the other hand, the other author had an industry experience of around five years which was related to admin and operation management. She was managing travel bookings for her office colleagues and was working in close association with the travel agents. This gave her the opportunity to understand the online air ticket purchase pattern of her colleagues.
2. **Rationality for Using Diary Method for Data Collection:** The reason sufficed by the researchers in employing diary approach for data collection was the consistency in recording the data that might have been missed out at the time of recall, as it entails real-time involvement (often at or as the case may be around the time of purchase) of the respondents, with minimal intervention from the researcher (apart from distributing and collecting the diaries). Most importantly, the lack of intervention facilitated the subjective freedom to the respondents in expressing their opinion about airline ticket booking ticket. Overall, diarizing response near the time of purchase also decreases delay in time which potentially result in response bias (Bolger, Davis, & Rafaeli, 2003).
3. **Diary Design:** Semi-structured diaries were given to the respondents to meet the research objectives. That is the questions were sufficiently general to elicit a board spectrum of insights into the entire domain of e-ticketing which had questions mostly based on 'how' questions as suggested by Patton (2002). This was followed by 'why' questions to delve into deductive inferences about what consumers could have experienced. In essence, the researcher designed the diary not merely to record event-based on time, but rather it was aimed at yielding information-rich data through the diary design which were more event-based (e.g., Bolger, Davis, & Rafaeli, 2003). In this event-based diary design, data collection is triggered by some focal experience of the participant. The focal experience was defined in the paper-and-pencil diary as all their air-ticket booking purchases. The respondents were asked to share their experience in the diaries for all their air ticket purchases. And as part of the exploratory approach of the study, it was mentioned in the diary that the respondents could mention any category without any restriction. It was also mentioned that the air ticket booking could be for any reason — business or pleasure. Also the respondents were requested to record their air ticket booking experience for around six months. For participating in the study a discount coupon was given to the respondents as a token of gratitude which they could avail on their next booking within six months.
4. **Administration of Diary Method for Data Collection:** There was a paucity of literature in this domain of hedonic and utilitarian motivations of Indian airline consumers. Thus the researchers agreed to follow an inductive approach to select information-rich cases (Corbin & Strauss, 2008)



for this study. Purposeful snow-ball and criterion sampling technique were used to recruit airline consumers as respondents, to explore their e-ticketing experience over a period of six months. This sampling technique is in line with Patton (1990) who has recommended purposive snowball sampling and criterion technique as a technique to identify information-rich cases for qualitative studies. It enables a researcher to find a more closely defined group of participants as per the research objectives. Therefore, the respondents chose the frequent air travelers from their social network spread across three major cities in India-Kolkata, New Delhi, and Hyderabad. Specifically, these cities being the metropolitan cities of India were characterized by a large online airline booking consumers who also represented different parts of the country, given the cosmopolitan environment of these cities. Most of the respondents were the business executives working in different hierarchical levels across different jobs and industries. These business travelers were the frequent travelers given their frequency of their travel visits in the last three months. The criteria of these business travelers to be selected as frequent travelers were that they travel for at least three to five times in a month by air.

5. **Data Analysis:** Out of 150 diaries distributed 60 diaries were received. 35 were males, and 25 were female participant out of the 60 participants. 14 respondents belonged to the senior level position where as 29 were working in the middle-level positions. 22 respondents have professional degrees. 20 respondents had experience of more than 15 years. Keeping in mind the confidentiality of information, only these demographic related questions were asked which pertained to — gender, hierarchical level, education, and work experience. Using Elo and Kyngas (2008) step-by-step approach, the inductive content analysis was used to analyze the responses which were collected through the personal diary method. The diaries were distributed equally among the two researchers for transcription. Then codes were generated for the transcribed diaries. The independently read each diary for several times to get the meaning as a whole. Then, each of the diaries was carefully read again to high light the texts related to hedonic and utilitarian motives in online ticketing context. The generated codes related to the highlighted texts were subsequently jotted down at the margins. During this analysis, an attempt was made to have as far as possible parsimonious codes. After the open coding of three to four transcripts of the diary, preliminary codes were finalized. Remaining diaries were then coded with these preliminary codes, and new codes were generated for the texts that did not fit into anyone of the previously generated codes. When all the diaries were coded, the information within a particular code was examined for consistency and relevancy. While checking for consistency and relevancy, some codes were combined whereas other codes were split into sub-categories. Finally, final codes were examined to organize them into a hierarchical structure as much as possible. The generated codes were then exchanged between the two researchers to check the codes (Refer Table 1).
6. **Findings:** The themes corresponding to utilitarian motivations behind the airline ticket book were cost saving, information seeking, contingency and one stop solution. Similarly, for hedonic motivations, the themes were gratification, living in the moment, social interaction, and variety-seeking. The findings highlighted the importance of hedonic benefits along with utilitarian benefits in e-ticket booking. To leap-frog it is essential for the airline companies to augment their utilitarian service offerings to holistic service offering by including hedonic benefits as well. Also, the current study was one of the preliminary studies which uncovered the utilitarian and hedonic motives from an emic perspective of online air ticket booking consumers in emerging markets like India.

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Table 1. Themes related to utilitarian motivations in online air ticket booking

Responses of the Participants	Codes	Themes
I get group discount which saves agent fees	Discount	Utilitarian
While booking, I can even book a cake, or gift which will be delivered at the preferred timing when I meet my spouse on our anniversary.	Gratification	Hedonic

Source: Reproduced from *The Qualitative Report (in-press)*

## CONCLUSION AND RECOMMENDATIONS

Researchers in the qualitative domain has often been condemned for resorting to interviews and techniques like focus groups at the cost of other relevant methods like diary method and other techniques like - ethnography studies, observation studies, and case studies, and diary method. When properly conducted diary method and these other qualitative research techniques can have numerous strengths. To ensure the validity of research findings of diary method, it is essential to gauge how far the findings are an accurate representation of the phenomena that they were intended to represent. Along with the validity of the diary method, the reliability of this kind of the study is another salient aspect which pertains to the reproducibility of the findings. The validity of the diary method can be ascertained by some techniques comprising of triangulation use of contradictory evidence, validation of respondents, and as well as through constant comparison. Triangulation is using two/more techniques to study the given phenomenon (Yeasmin & Rahman, 2012). Contradictory evidence also known as deviant cases must be examined to account for the analysis to ensure that researcher bias does not interfere with or modify their perception of the insights drawn. Respondent validation is when participants are allowed to read through the qualitative data and then provide their feedback on the interpretations of their responses by the researchers (Noble and Smith, 2015; Anderson, 2010). This provides the researchers with a method of identifying for inconsistencies, overcoming researchers' assumptions, and also provides them with an avenue to revisit their qualitative data analysis. The use of constant comparison can be done when one piece of the qualitative data of the diary method is compared with previous data, so one piece of the data is not considered on its own (Hewitt-Taylor, 2001; Anderson, 2010). This is expected to enable the researchers to treat the qualitative data as a whole as the research can identify emerging/unanticipated themes within the research project in this process.

Exercising the above caution is expected to bring the reliability and the validity of the qualitative data of the diary method. But, as with most of the qualitative research techniques, the researchers can not overlook the pros and cons of designing a diary study (Lallemand, 2012; Lingsom, 1979). The main cons of this method are the cost and time associated with it. First, the quality of the results depends on the participants as the diary is depended on the writing ability of the respondent in expressing their experiences (Kenten, 2010). This becomes more critical in the case when the study involves several open-ended questions. The researchers also have to ascertain a high degree of the commitment of the respond in obtaining the authentic and reliable diary entries. Second, diary study is effective when judicious training sessions are conducted to ensure that respondents completely comprehend the requirement of the things which are expected from them to be reported and also how and when to record such information. Third, analyzing diary entries is tedious and time-consuming and this process consumes even more time when a pen-and-paper diary is incorporated (Pannucci & Wilkins, 2010).

This chapter has introduced diaries as a valuable tool for collecting qualitative data. It is specially meant for daily recording activities and personal experience of the participants. However, diary researcher should thoroughly understand follow the structured plan of actions for conducting any diary research. Diary research requires a lot of researcher's time and effort in conducting diary research. Formal or the structured diaries are most frequently used in social science research and provides a platform for the longitudinal data collection. Diaries generate a lot of transcripts which requires for further analysis and interpretation. Hence, researchers use content analysis as key methods for qualitative data analysis and transform the qualitative data into interpretable codes and themes.

## **CRITICAL QUESTIONS**

1. What is diary method? Explain the components of diary research.
2. Explain the advantages and the disadvantages of using diary method in experimental research designs?
3. What are the different types of dairy approach in qualitative research design?
4. Explain the two methods of diary analysis.
5. How to analyze the text data collected from the diary research? Explain for example

## **SUGGESTED ANSWERS**

**Answer 1:** Diary is a form of qualitative data collection where the individual's experiences, behaviors, thoughts, and feelings are captured in the form of narratives over a period. It is flexible research design and captures the real-time information regarding events and observations that might be neglected by way of data collection methods. Diary research has three main components such as (1) initial interview (explain the complete process of diary research), (2) research diary (actual stage of data collection and analysis), and (3) debriefing of the interview (Debriefing process).

**N.B:** Refer the main text of the chapter for the better explanation of components.

**Answer 2:** Dairy is the most effective method of data collection where the researcher can capture the most sensitive customer data and also study a particular type of phenomenon that would not otherwise be possible or accessible to researchers because of its temporal or situational nature. Diary helps in overcoming the memory problems and records their feelings and personal experiences at their convenience. Hence it is more detailed and accurate regarding activities and the context. However, diary method of data collection requires a considerable amount of time and effort in collecting and analyzing the qualitative data.

**N.B:** It would be nice to explain the diary method of data collection through examples. The details advantage and challenges of diary method can be referred from the main text of the chapter.

**Answer 3:** There are two types of diary approach in a qualitative data collection procedure. These are namely; solicited and unsolicited diaries. Solicited diaries are those where the diaries are written with full participant's knowledge and are intended for specific research objective and public consumption. On the other hand, unsolicited diaries are considered to be open-ended and have very little or no guidance regarding the format and the content of the documentation process. These

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are considered to be spontaneous and are written with no specified intention for external reading and analysis.

**N.B:** Students may also add the examples and its application in different fields.

**Answer 4:** Refer the illustration and explain the example accordingly.

**Answer 5:** Textual data collected from the diaries are being coded, and then linkages between the codes are created to derive a proper meaning out of the study. Codes used in the content analysis are categorized into three types:

1. **Open Coding:** This is the first stage of qualitative data analysis, where the researcher reduces the complete set of textual data into controllable groups after a through reading and develops categories based on their properties and dimensions.
2. **Axial Coding:** Axial coding is a process of making links between codes or identifying the relationships among the open codes created in the first stage of the content analysis.
3. **Selective Coding:** Find out the central or the core variable in the content analysis that includes all the data and then selectively codes the text data that relates to the primary variable you have identified.

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## **KEY TERMS AND DEFINITIONS**

**Axial Coding:** The process of identifying and linking the codes created in the first stage of content analysis.

**Content Analysis:** A method of analyzing qualitative textual data by developing codes and themes.

**Diary Method:** It is a process of capturing daily events, observations, and the real-time individual experiences over time in a natural setting.

**Open Coding:** The process of reducing a large bundle of qualitative textual data into actionable codes.



**Researcher Bias:** It is a process where the researcher performing the research influences the results of the study.

**Solicited Diaries:** A document created by the informants on researcher(s)' request. It provides complete structural information about participant's daily life experiences.

**Unsolicited Diaries:** A document created by the informants without specific instruction.

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## Chapter 22

# Setting Up and Running a Q-Methodology Study in an Online Survey Research Suite

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### **ABSTRACT**

*The q-method, as a graphic (visual) elicitation, has existed since the mid-1930s. Setting up a q-method, with q-sort capabilities, in an online survey platform, extends the reach of this method, even as data has to be processed in a quantitative data analytics suite. This chapter describes the setting up of a visual q-sort and the related debriefing on the Qualtrics Research Suite. The available data may be extracted and analyzed in a basic statistical analysis tool for factors and preference clusters.*

### **INTRODUCTION**

A q-methodology study (q-method, q-inquiry) elicits “operant subjectivity” through the presentation of various selected text and visual elements to a p-set (of respondents) to place into three general categories: agree strongly, neutral, or disagree strongly. The presented elements are selected from a “concourse” of elements from the particular relevant issue universe related to the particular research question. After select respondents (in the p-set) provide insights, they also are asked to debrief their responses for follow-on information. The q-method provides insights about general preferences around a particular issue but also individual human patterns of preferences, which may be studied as preference clusters.

Often, when researchers want to understand what people think of particular policies, practices, messaging, and in-world phenomena, among other things, they will conduct interviews, focus groups, surveys, and other research approaches. They will generalize from the findings and use their insights for awareness, decision making, policy making, policy implementation, marketing, and advertising. One lesser-known approach for understanding people’s thinking is the q-methodology, a “card sorting” approach based on various topic-related statements that involves selected insider participants (in small groups) to represent diverse opinions (to saturation) and to map various stances around particularized

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topics. Q-methodology enables the exploring of “tastes, preferences, sentiments, motives and goals, the part of personality that is of great influence on behaviour but that often remains largely unexplored” (van Exel & de Graaf, 2005, p. 2). Here the sampling is “strategic” vs. “random” (Armatas, et al., 2014, as cited in Sy, et al., 2018, p. 4). One key feature is the convenience of the setup for analysis.

Q-methodology (q-method, q-inquiry, q-technique) was first introduced back in 1935 by British physicist and psychologist William Stephenson (1902 – 1989). This approach enables data collection through a card sorting activity (known as the q-sort) by a group of selected “insider” respondents (known as the p-set). Here, the data analysis is described as an “inverted factor analysis” with “persons as the variables rather than the tests, and the population (as)...the group of tests rather than the group of persons; i.e. the rows of the matrix are correlated” (Stephenson, 1936).

*These individual rankings (or viewpoints) are then subject to factor analysis. Stephenson (1935) presented Q methodology as an inversion of conventional factor analysis in the sense that Q correlates persons instead of tests; “(w)hereas previously a large number of people were given a small number of tests, now we give a small number of people a large number of test-items”. Correlation between personal profiles then indicates similar viewpoints, or segments of subjectivity which exist (Brown 1993). By correlating people, Q factor analysis gives information about similarities and differences in viewpoint on a particular subject. If each individual would have her/his own specific likes and dislikes, Stephenson (1935) argued, their profiles will not correlate; if, however, significant clusters of correlations exist, they could be factorised, described as common viewpoints (or tastes, preferences, dominant accounts, typologies, et cetera), and individuals could be measured with respect to them. (van Exel & de Graaf, 2005, p. 1)*

A follow-on to the card sorting involves debriefing the respondents about their selections to better understand them. Q-methodology research and analysis enables the study of selected people’s subjective perceptions (viewpoints, beliefs, values, opinions, tastes, and preferences) around target issues to understand their “operant subjectivity,” their unique points of view which may inform their public stances and behaviors. This method enables the mapping of people’s individual response patterns around a topic (based on collections of granular opinion statements as the basic units of analysis) and group-based subjective patterns. The respective textual cards are sorted into three general categories: agreement, neutrality, and disagreement (Table 1). [Other variations are like “most like how I think,” neutral,” and “least like how I think,” for example, to align with colloquial expressiveness. Some research studies only use two categories: agreement or disagreement. The “distinguishing statements” are those placed on the sorting grid “in a statistically significant different position compared with all other factors”, and the “characterizing statements” are those “placed at the two polar ends of the sorting grid of each factor” and will affect how the research is understood (Paige, 2015a, p. 76).] Some q-methodology research involves the usage of imagery, audio, video, and a mix of other types of informational contents, beyond cards. This research approach is also referred to as “discourse analysis” (Baxter & Hacking, 2015, p. 3111), in part because of the aligning of the cards to be sorted with the level of knowledge of the respondents in relation to the focal research topic. (A q-methodology research targeting experts would differ from the research related to lay-persons.)

As compared to a factor analysis, a q-method describes “a population of viewpoints” vs. “a population of people.” Its main question is to ask “what is the relationship between different peoples’ viewpoints” as compared to “what is the inter-relationship among a large set of observed variables.” In a q-method study, “opinion statements are the unit of analysis” as compared to people as the unit in conventional

## Setting Up and Running a Q-Methodology Study in an Online Survey Research Suite

Table 1. Q-Methodology and sorting through topic-related cards to express subjective preferences

Disagree Strongly	Neutral	Agree Strongly

factor analyses. The statements of a Q-sort are “interactive” as compared to “statements in a survey... (which) are independent” (Brown, 1980; Newman & Ramlo, 2010, & Stephenson, 1953, as cited in Paige, 2014, p. 640). In q-methodology research, participants assign scores to their intensities and directions of evaluations of statements. They are assumed to be self-aware and accurate in their responses.

In traditional applications of this research, the researcher(s) engages with respondents to conduct the research. However, with the capabilities of online survey research suites, this graphic elicitation method (using the visual grid of the card sort to elicit feedback) of research may be achieved using an online tool—with a wide range of technological enablements (ability to control the question elicitations, data collection, data visualizations, and others), and broad geographical reach. This work explores the potential usage of a popular online survey platform for conducting an online q-methodology

## REVIEW OF THE LITERATURE

In the research, q-methodology (or q-method) is achieved in five principal steps:

1. ‘Concourse’ or the ‘Q-universe’ definition
2. ‘Q-set’ or the ‘Q samples’ development
3. ‘P-set’ or ‘person-sample’ definition
4. ‘Q-sort’ gathering
5. Factorial analysis and interpretation (McKeown & Thomas, 2013, as cited in Iofrida, De Luca, Gulisano, & Strano, 2018, p. 47)

An earlier description of the five necessary steps add “conditions of instructions” in Step 3, which is important to the integrity of the research.

### Subjectivity Concourse

A q-methodology study is a close-ended and ipsative (forced choice) one, in some ways, with select respondents asked to sort q-sort cards from a universe of statements a comprehensive domain-based topic-based concourse (or “subjectivity concourse”). A “concourse” is defined as a flow of communicability:

*In Q, the flow of communicability surrounding any topic is referred to as a **concourse** (from the Latin **concursum**, meaning ‘a running together,’ as when ideas run together in thought), and it is from this concourse that a sample of statements is subsequently drawn for administration in a Q sort. (Brown, Apr./July 1993, pp. 94 - 95)*

The “level of discourse dictates the sophistication of the concourse...” (Brown, Apr./July 1993, p. 95). Interestingly, depending on the research and based on the available concourses in a review of the literature, the respective concourse statements are not necessarily single-barreled at all and may be fairly complex. Concourses comprise “the raw materials for Q methodology” (Brown, Apr./July 1993, p. 97). Another definition of a concourse may be “any subjective statement related to the topic” (Øverland, Thorsen, & Størksen, 2012, p. 314).

The contents of a concourse may be informed through formal sources like literature reviews, expert interviews, policy documents, news media, and so on, as well as informal sources like gray literature, social media contents, internet discussions, or some mix of the formal and informal. The criticality of the concourse is that it is the full set of contents from which select q-set statements are drawn for the “cards,” which are sorted by participants. (Gaps in the concourse and then the derived q-set may mean blind spots in the research and gaps in knowledge.) While many q-methodologies are based on text-based q-sets, concourses may include “collections of paintings, pieces of art, photographs, and even musical selections...The idea of concourse incorporates virtually all manifestations of human life, as expressed in the lingua franca of shared culture” (Brown, Apr./July 1993, p. 95). [In digital q-methodologies, analogically, the “cards” may be multimodal, and may comprise of text and imagery, audio, video, and a mix of contents.]

Researchers describe different methods of finding elements for a concourse. They emphasize the importance of comprehensiveness or saturation in capturing contents for q-methodology concourses and then selecting the proper q-set materials for a wide range of distinctive “cards” for the q-sort activity. [Note: In some q-methodology designs that elicit responses for micropayments from crowd-sourced work sites, some add “attention traps” to validate/invalidate the level of attention paid by the online respondent. These may be simple statements that tell respondents to put a particular item into a particular category.]

Based on the research data, various statistical analyses (like scree tests) are run to extract underlying factors to understand differing clustering around points of view about the topic (Mandolesi, Nicholas, Naspetti, & Zanolì, 2015, p. 29).

## **Q-Set (or Q-Samples)**

The q-set is comprised of a selection from the subjectivity concourse “universe” of possible contents. The contents of the q-set “must always be *broadly representative* of the opinion domain at issue” to help answer the particular research question(s) at issue (Watts & Stenner, 2005, p. 75). Capturing contents for the q-sort may come from literature reviews (Vizcaíno, García, Villar, Piattini, & Portillo, 2013) as well as a range of other less formal sources. The q-set is a form of “item sampling” and should be “heterogeneous” and conceptually distinctive to cover a range of topics (Watts & Stenner, 2005, p. 74).

The q-set “typically consists of 30 to 60 sentences, or a third of the entire concourse” and depends on the “researcher’s discretion” (Iofrida, De Luca, Gulisano, & Strano, 2018, p. 47). The optimal size of a q-set is related to several factors: the amount of “cards” needed to represent the domain and research question space, the practical size of the q-sort grid, respondent knowledge, respondent fatigue, and other practical concerns. The composite q-set is generally thought to be somewhat larger than the p-set (number of invited participants). The heart of the q-methodology is the q-sort, where “a person is presented with a set of statements about some topic, and is asked to rank-order them (usually from ‘agree’ to ‘disagree’), an operation referred to as Q sorting.” (Brown, Apr./July 1993, pp. 92 - 93)

One research team writes: “In Q-methodology, breadth and diversity of views are more important than proportionality in the selection of subjects (Brown, 1980, p. 260). Typically, it requires from 20 to 50 subjects (Q-set), and involves 30 to 50 statements (Q-sample). The small Q-set often raises concerns with the generalization of the findings beyond the studied group, as noted by Hermans et al. (2012: p. 87),” as cited in Pereira, Fairweather, Woodford, & Nuthall, 2016, p. 2).

## **P-Sets (or People Samples)**

In q-method, the individuals invited to participate in the research are those “data rich” respondents who have access to the relevant information (possibly based on their roles in a field), such as stakeholders to particular in-world phenomena or experts (such as those brought into Delphi studies). Q-method research engages the sense of power in “insiders’ views” (Pereira, Fairweather, Woodford, & Nuthall, 2016, p. 2). In q-method, the unit of measure involves the “psychological significance of each statement for each individual” (McKeown & Thomas, 1988, p. 48, as cited in Pereira, Fairweather, Woodford, & Nuthall, 2016, p. 2).

The number of members to a p-set are those generally supposed to be smaller than the q-set (Brewer, 1999, as cited in van Exel & de Graaf, 2005, p. 6). Ultimately, there should be a sufficient number to enable their segmentation into various typologies of respondent types (based on patterned mixes of shared perceptions and opinions). In the research literature, the ranges mentioned are 40 – 60 respondents in a typical p-set, with the idea that the right number enables stable findings with additional respondents not changing findings much (practically or ideally). The clusters of correlations from factorizing provide senses of “common viewpoints” (van Exel & de Graaf, 2005, p. 1) and points of “mutual coherence” for respondents (Brouwer, 1999, as cited in van Exel & de Graaf, 2005, p. 3). A q-methodology research approach does not require large numbers of participants as in R correlations “for it can reveal a characteristic independently of the distribution of that characteristic relative to others characteristics” (Smith, 2001, as cited in van Exel & de Graaf, 2005, p. 2).

The identification of possible respondents in the p-set stems from qualitative sampling methods, with smaller sets of select “informants”. Q methodology is seen as a way to “subvert the assumptions of dominant objectivism that underlie the R-methods” to enable a post-positivist approach to data collection and analysis (Durning, 1999). Human subjectivities may be structured in more formalized ways. For a full range of opinions, the p-set should be as diverse as possible, reflecting different points of view and different population segments.

Demographic variety is likely important as well, and the related data is sometimes reported with the respective extracted factors and salient preferences (Ha, 2018, p. 127). Sociodemographic characteristics may be extracted and compared with factor weights for a p-sample (Park, Yeun, & Hwang, 2016, p. 146). Item analysis may be run against the statements in the q-set to understand convergences and divergences of agreements among particular q-methodology participants (Park, Yeun, & Hwang, 2016, p. 147). Respective statements from the q-set may be analyzed for respective values in factor arrays to understand how each item loads on particular factors (Iofrida, De Luca, Gulisano, & Strano, 2018, p. 51). Different stakeholder groups may be identified based on their similarities and differences in how they emplace the respective q-sort cards (Sy, et al., 2018, p. 7), and names or labels may be applied to these respective groups based on focuses. Q-factor analysis has been labeled “an early form of cluster analysis” (Brown, Apr./July 1993, p. 99). Particular mapping may be done to understand consensus around particular items and divergences around others at a macro level (Sy, et al., 2018, p. 8). Correla-

tion matrices may be run to identify co-occurring items and associations between (Paige, 2015a, p. 75). Ultimately, a q-methodology analysis identifies correlations between respondents (subjective actors) across a sample of variables (sorted items). This enables the extraction of the main population stances around a particular topic as defined by respective weightings of particular items in combination. The respective participant groups may be identified based on their expressed card-sorting and their loading on different factors (Iofrida, De Luca, Gulisano, & Strano, 2018, p. 52); in other cases, respondents may be pre-identified and studied based on their preferences (with known group identities).

## **The Q-Sort and Follow-On Debriefing Research**

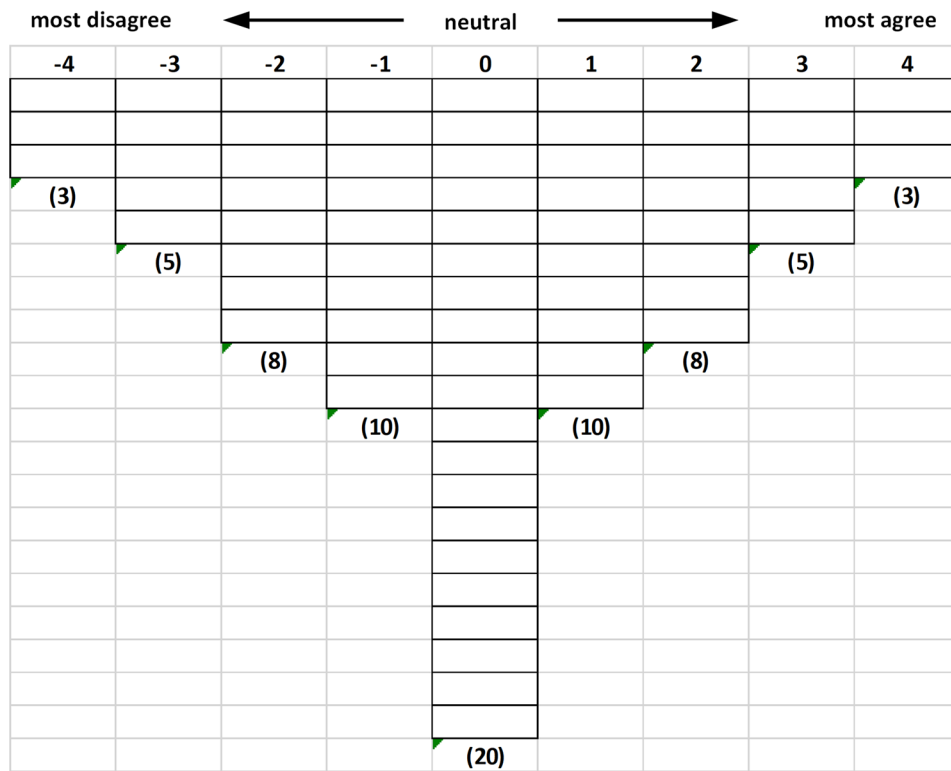
This Q-methodology approach is a fairly straightforward one, as described, but the underlying assumptions seem somewhat revolutionary. People's opinions are seen as having powerful insights. Even one response can be powerful: "In principle as well as practice, single cases can be the focus of significant research" (Brown, Apr./July 1993, p. 94). Q-methodologies enable a range of askable questions:

- What are people's (stakeholders', experts', others') main perceptions and preferences from a q-set of cards or other informational contents (surrounding a particular issue or question)?
- What are some group patterns of preferences? How can these groups be named to understand segments of a population (by opinion)?
- What do the identified preference patterns suggest of follow-on actions? Expenditures? Behaviors (individual and group)?
- What are the implications of the identified preferences and the non-preferences? What do the findings suggest for decision making and design and other actions?

A q-methodology is considered including quantitative and qualitative means. Factor analyses are typically from quantitative research studies while selecting "q populations" or concourses, q-sets, and respondent p-sets of small groups of insiders is more from qualitative research practices (Ha, 2018, p. 125). In this method, there are both assumptions of objectivity and subjectivity in this mixed methods work. (Ha, 2018, p. 125) Another researcher observes that factor analysis is quantitative and factor interpretation is qualitative, and both are required in q-methodology (Paige, 2015a, p. 75).

A q-sort is a "ranking order" of information items in a "forced distribution using Q sort table" (Ha, 2018, p. 125). The card-sort grid, q-sort table, q-sort scoresheet is not only just the graphic elicitation for the card sort, but it also is used as a visual representation of frequency findings (as in an intensity matrix or table). In general, this q-grid is "bell shaped" (Baker, Feb. 28, 2013) and evokes a normal or "bell curve" shape, somewhat suggestive of a standard or "quasi-normal distribution" (Watts & Stenner, 2005, p. 77). That intuition is accurate in that the extremes tend to be somewhat less common than the more moderate opinions in the middle of the curve. In some cases, the card-sort grid may be set up as in Figure 1, or may be flipped with the curve vertical. The "most agreeable" items would be at the +4 column, and the "most disagreeable items" would be in the -4 column. (Watts & Stenner, 2005, p. 79) The number of available cells for the cards should be exactly sufficient for the available numbers of cards. This q-sorting score sheet (or card-sort grid, or q-board) form is not only used to elicit responses from the p-set but also to showcase different patterned responses as intensity matrices. These may be used to provide spatial senses of the issues of highest interest and of preference patterning and subjectivities around the topic. (Figure 1)

Figure 1. A basic card-sort grid in Q-Methodology (as a graphic elicitation)



A Basic Card-Sort Grid in Q-Methodology (as a Graphic Elicitation)

A q-method research sequence is comprised of two parts. One involves the card-sorting, and the second part is an interview to explore the subjective actor’s ideas more deeply (Brown, Apr./July 1993, p. 106). Replicability is an important value for this research (van Exel & de Graaf, 2005, p. 3).

**Data Analytics**

Within q-methodology, there are various practices to promote research quality. The concourse should be a full one, capturing the universe of expressed opinions in a particular space. The q-method may be pilot-tested for improvements. In terms of data analysis, there are standards for rigor in running factor analyses (in terms of eigenvalues, in terms of factor loading, in terms of rotations), principal components analyses, analyses of variances of factor scores, centroid factor analysis, computational clustering, numbers of items in q-sets, numbers of participants in p-sets, and in manual coding textual responses, interrater comparisons enable quality standards. There are various types of external validation methods. One research project involved validating through citizen validation to connect the research insights with the larger societal group (Forrester, Cook, Bracken, Cinderby, & Donaldson, 2015, p. 203).



## **A WIDE RANGE OF RESEARCH TOPICS IN Q-METHOD RESEARCH**

Q-method research has a “long pedigree in psychological, political and sociological research” and has application for human geographers (Eden, Donaldson, & Walker, 2005, p. 413), among others. Q-method has been applied to a range of topics in psychology, healthcare, environmental policy and practice, food production, business and marketing, employment, consumer experiences, social advancement, education, ethics, leadership, assessment of test instruments, and other fields. The research method creates a sense of the local, of a close-in question, of particular thin-slicing of people groups, and of defined decision spaces reliant on human knowledge, actions, and cooperation.

In terms of “psychology” studies (Serfass & Sherman, 2013), q-methods have been applied to personality description (Block, 1961); attachment relationships (Waters & Deane, 1985); attachment behaviors of one-year-olds (Vaughn & Waters, Dec. 1990); infant-mother attachment (Pederson, Moran, Sitko, Campbell, Ghesquire, & Acton, Dec. 1990); affect regulation (Westen, Muderrisoglu, Fowler, Shedler, & Koren, 1997); children’s emotion regulation (Shields & Cicchetti, 1997); emotional attachment patterns (van IJzendoorn, Vereijken, Bakermans-Kranenburg, & Riksen-Walraven, July/Aug. 2004); “wisdom in the Korean elderly” (Sung, 2011), and other topics.

In “healthcare,” q-methods have been applied to those living with chronic pain (Risdon, Eccleston, Crombez, & McCracken, 2003); individual perspectives on “health-related quality of life” (Stenner, Cooper, & Skevington, 2003, p. 2161); patient preferences for the management of hypertension (Morecroft, Cantrill, & Tully, 2006); elderly patients’ attitudes towards death and dying (Yeun, 2005); lay understandings of Down’s syndrome (Bryant, Green, & Hewison, 2006); informal caregivers’ views of respite care (van Exel, de Graaf, & Brouwer, 2007); patients with chronic conditions and their care preferences (Jedeloo, van Staa, Latour, & van Exel, 2010); the perception of maternity services across different generational groups (Cross-Sudworth, Williams, & Herron-Marx, 2011); “informed choice in antenatal screening” in ethical healthcare (Ahmed, Bryant, Tizro, & Shickle, 2012, p. 997); motivating reasons for orthodontic treatment (Prabakaran, Seymour, Moles, & Cunningham, 2012); the promotion of healthy food environments (Kraak, Swinburn, Lawrence, & Harrison, 2014); self-management support for those with chronic conditions (van Hooft, Dwarswaard, Jedeloo, Bal, & van Staa, 2015); priority setting for health care in ten European countries (van Exel, Baker, Mason, Donaldson, Brouwer, and EuroVaQ Team, 2015); health beliefs (Stone, et al., 2016); “kidney transplant patients’ attitudes towards self-management support” (Grijpma, et al., 2016); ways to reduce anxiety among adult orthodontic patients (Lin, et al., 2017); acceptance of health promoting hospitals (Mahmoodi, Sarbakhsh, & Shaghghi, 2018); turnover intention in a clinical setting for male nurses (Kim & Shim, 2018); clinical nursing resilience experiences in a hospital setting (Shin, Kim, & Ji, 2018); laypersons’ senses of smile aesthetics (Batra, Daing, Azam, Miglani, & Bhardwaj, 2018), and experiences with sensory relearning after hand surgery (Vikström, Carlsson, Rosén, & Björkman, 2018).

In terms of “environmental policy and practice,” “Q” has been applied to the study of attitudes towards national forest management (Steelman & Maguire, 1999); environmental issues and sustainability (Barry & Proops, 1999); wind farms (Ellis, Barry, & Robinson, 2007); environmental sustainability (Doody, Kearney, Barry, Moles, & O’Regan, 2009); an environmental regime’s effectiveness in a particular region (Frantzi, Carter, & Lovett, 2009); various conceptualizations of “rurality” (Duenckmann, 2010); “energy options from biomass” (Cuppen, Breukers, Hisschemöller, & Bergsma, 2010, p. 579); land-use changes in an indigenous community (Lansing, 2013); non-market valuations for natural resources for policymaking (Armatas, Venn, & Watson, 2014); the solving of energy problems on a

developing continent (Matinga, Pinedo-Pascua, Vervaeke, Monforti-Ferrario, & Szabó, 2014); hydrogen production from waste studies (Baxter & Hacking, 2015); the exploration of stakeholder perceptions of “complex environmental problems” (Forrester, Cook, Bracken, Cinderby, & Donaldson, 2015, p. 199); the valuing of “non-market environmental goods and services” (Zanoli, Carlesi, Danovaro, Mandolesi, & Naspetti, 2015); community experiences with resource extraction and mining (Chapman, Tonts, & Plummer, 2015); the opinions of various stakeholders to a “payment for watershed services” approach to manage a forest watershed (Jaung, Putzel, Bull, Kozak, & Markum, 2016); socioeconomic impacts of mineral resources (Weldegiorgis & Ali, 2016); fair trade carbon projects (Howard, Tallontire, Stringer, & Marchant, 2016); the “impact of photovoltaic applications on the landscape” in a photo-based card-sort (Naspetti, Mandolesi, & Zanoli, 2016, p. 564); forest management (Hugé, et al., 2016); ecosystem services (Hermelingmeier & Nicholas, 2017); communities’ primary motivations and barriers to achieving de-carbonization (Byrne, Byrne, Ryan, & O’Regan, 2017); sustainability in business practices (Silvius, Kampinga, Paniagua, & Mooi, 2017); the recycling of potable water based on insights of water stewards (Ormerod, 2017); invasive alien species (Vaas, Driessen, Giezen, van Laerhoven, & Wassen, 2018); community perceptions of gold mining (Nguyen, Boruff, & Tonts, 2018); ecosystem services (Sy, et al., 2018); the policies and practices around environmentally protected areas (Niedziałkowski, Komar, Pietrzyk-Kaszyńska, A., Olszańska, A., & Grodzinńska-Jurczak, M., 2018); the study of expert decision making from “attitudinal divergences that exist and...patterns of shared assumptions forming attitude-related communities” around forest use decision making (Nijnik, Nijnik, Sarkki, Muñoz-Rojas, Miller, & Kopy, 2018, p. 210); agri-ecology (Schall, Lansing, Leisnham, Shirmohammadi, Montas, & Hutson, 2018); farmers and their environmental behaviors (Walder & Kantelhardt, 2018); scale of fisherman enterprises and fisherman attitudes towards marine protections policies (Bueno & Schiavetti, 2019), and ecotourism planning (Lee, 2019).

Q-methods have been applied to “food production” research. For example, there have been studies on agri-environmental studies such as attitudes towards the use of agricultural water as a resource (Forouzani, Karami, Zamani, & Moghaddam, 2013); stakeholder views of marine fish farming (Bacher, Gordo, & Mikkelsen, 2014); innovation in “low-input and organic dairy supply chains” (Mandolesi, Nicholas, Naspetti, & Zanoli, 2015, p. 25); beef farming (Pereira, Fairweather, Woodford, & Nuthall, 2016); money crop production (Iofrida, De Luca, Gulisano, & Strano, 2018), and food marketing (Brard & Lê, 2018).

In “business and marketing,” researchers have explored perceptions of global software development or “GSD” (Vizcaíno, García, Villar, Piattini, & Portillo, 2013); e-commerce website design (Liu & Chen, 2013); tourism market segmentation (Mokry & Dufek, 2014); product development (Courcoux, Qanari, & Faye, 2015); and product placement in digital contents (Kim & Shin, 2017). In “employment” research, q-techniques were applied to the study of social work (Ellingsen, Størksen, & Stephens, Dec. 2010). “Consumer experiences” have been studied, including home owner experiences with domestic energy retrofits (Kerr, Gouldson, & Barrett, 2018) and non-professional consumer theories of healthy nutrition (Yarar & Orth, 2018).

In studies related to “social advancement,” there have been q-methods studies related to “political subjectivity” in political science (Brown, 1980); transportation and “social inclusion” (Rajé, 2007); self-acceptance in the form of “ego-integrity” in “old adults” (Chang, et al., 2008, p. 246); energy infrastructure projects (Cuppen, Bosch-Rekvelde, Pikaar, & Mehos, 2016); concepts of global citizenship attitudes (Sklarwitz, 2017), and attitudes towards small hydroelectric plants (Pagnussatt, Petrini, dos Santos, & da Silveira, 2018).

Q-method-based studies of “education” address topics like health education and health promotion (Cross, Apr. 2005); practices in preschool classrooms (Bracken & Fischel, 2006); nursing research (Akhtar-Danesh, Baumann, & Cordingley, Oct. 2008); teacher ideas about “children of divorce” (Øverland, Thorsen, & Størksen, 2012); “the level of methodological skills of the prospective teachers” (Evelina & Nadia, 2014, p. 60); attitudes towards the video-assisted debriefing of a learning simulation for nursing students (Ha, 2014); methods by preschool teachers to promote peer relations (Gamelas & Aguiar, 2014); nursing education (Yeun, Bang, Ryoo, & Ha, 2014; Paige, 2015b); clinical practice by nursing students (Ha, 2015); senses of poverty among “midwestern nursing students” (Work, Hensel, & Decker, 2015, p. 328); priorities for early childhood education practices among different parental groups (Hu, Yang, & Jeong, 2016); library priorities for undergraduate learners (Kelly & Young, 2017); preschool teachers’ views on linguistic diversity (Sung & Akhtar, 2017); the examination of learning among nursing students (Ha, 2018); the experiences of graduate students engaging in intercultural practices (Zhang, 2018), and undergraduate nursing students’ senses of peer tutoring in a simulation laboratory (Li, Petrini, & Stone, 2018).

Q methods have been applied to elicit sexual ethics among undergraduate students (Park, Yeun, & Hwang, 2016). “Q” has been applied to the evaluation of collective leadership (Militello & Benham, 2010). Q-techniques have been applied to the assessment of questionnaire items (Nahm, Rao, Solis-Galvan, & Ragu-Nathan, Winter 2002) and other test instruments.

To summarize, Q-method research has been applied in various ways to suit local research purposes (Brard & Lê, 2018). Q-methodologies are not always used in stand-alone ways. Sometimes, there is a mix of both Q and R methodologies in one study (Kim & Lee, 2015). Q-methodology “has its origins in factor analysis, with the difference being the inversion of rows and columns” (Pereira, Fairweather, Woodford, & Nuthall, 2016, p. 2). In another case, q-method was combined with participatory mapping (Forrester, Cook, Bracken, Cinderby, & Donaldson, 2015). In another study, q-methods were combined with eye-tracking research (Kim & Shin, 2017). Also, q-analysis is not just applied as a one-off; it can be applied over time to understand changes in perspectives (Davies & Hodge, 2012).

## **SOME EXAMPLES OF DATA RELATED TO Q-METHODOLOGY**

It is possible to understand the most salient “agreement” and “disagreement” items from the p-set of respondents through simple frequency counts. It is possible to see what is most non-salient, in terms of neutral items from the q-set (sample from the concourse). It is possible to acquire a respondent sense of what is “meaningful” (Watts & Stenner, 2005, p. 74). Factor theory, q-form not R, informs q-methodology (Stephenson, Oct. 1993/Jan. 1994, p. 13). The “centroid” extraction is often used “in conjunction with hand rotation” instead of the Varimax rotation method for q-methodology (Newman & Ramlo, 2010, p. 510).

A general data table may involve the item scores for each of the q-set items as in Table 2. This would show the min-max ranges of the respective positions of the q-set items in a min-max range across a number of positions (in this case, five positions). Such a table shows “comparative ranking” of the items generally and / or based around particular factors (Watts & Stenner, 2005, p. 83).

Another approach involves identifying the top “most like / most unlike statements” by creating a table like this Table 3.

Table 4 shows what the factor table may look like.

Table 5 shows what a pre-profiled grouping may be done in relation to the identified factors.

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*Table 2. Min-max ranges from Q-Sort grid positionality of Q-Set items*

Unique Identifier	Q-set item (or statement) in original order	A Lowest Position in Q-sort Grid	B Intermediate	C Center-most	D Intermediate	E Highest Position in Q-sort Grid
	Item 1					
	Item 2					

*Table 3. Q-Set items and their positionality in relation to other items*

Unique Identifier (like a number)	Q-set item (or statement)	z-score	Grid position (like -6 to +6, depending on column position in the q-sort /card sort grid)

*Table 4. Composite factor scores of the Q-Set*

Q-set items	Factor 1	Factor 2	Factor 3	Factor 4
Item 1	(factor loadings)			
Item 2				
Item 3				

*Table 5. Pre-Q-Method research profile groups and factor loadings*

Role-based members of the p-set	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Group 1					
Group 2					
Group 3					

To understand the segments of the population in terms of card sorts, cluster analyses are conducted:

*Q-sorts from all respondents are correlated and factor analysed in order to yield groups of people who have ordered the statements similarly (i.e., have similar views). In this process, statements have little importance by themselves; more important is the relationship amongst statements, which is revealed by the way respondents sort them (Addams, 2000; Brown, 1980; McKeown and Thomas, 1988). The resulting factors represent major viewpoints: the higher the respondent's loading on a factor, the greater is that person's association with the viewpoint represented by that factor (McKeown and Thomas, 1988). Interpretation of factors occurs by consistently producing explanations for the factor arrays. Finally, labels are typically established for each factor to pinpoint its salient characteristics that summarise the viewpoints represented by the factor (Addams, 2000: p. 33). (Pereira, Fairweather, Woodford, & Nuthall, 2016, p. 2)*

Understanding the opinion segmentation may be represented in Table 6.

*Table 6. Factor loadings (or item patterns) and applied group identities based on Q-Set profiling*

Role-based descriptions based on Factor Loadings	Named Group A	Named Group B	Named Group C	Named Group D	Other
Factor 1 / Item Pattern 1 (with item breakdowns)					
Factor 2 / Item Pattern 2 (with item breakdowns)					
Factor 3 / Item Pattern 3 (with item breakdowns)					

Besides the simple frequency counts and factors and identification of groups from shared factor loadings, it is important to analyze the textual debriefing data as well. The text analyses may be linked to particular quantitative q-sort responses to see if there are patterns of interest. It is important to engage in “distant reading” of the responses to capture insights such as topic focus and sentiment analysis. Then, there is the “close reading” of the textual contents, too, for deeper understandings of the responses and the selection of quotations for “color” in reporting out of the findings.

## **RUNNING A Q-METHODOLOGY STUDY IN AN ONLINE SURVEY RESEARCH SUITE**

Based on the research, it is possible to draft out a four-phase sequence of how to set up and deploy a q-methods study on an online survey research platform. (Figure 2)

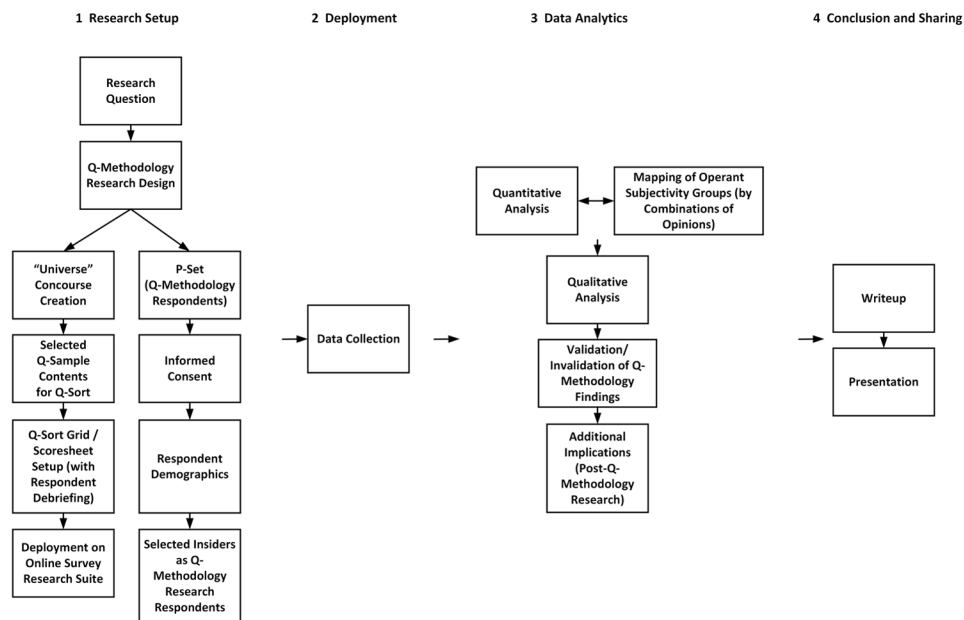
### **A Universe Concourse to Q-Set Items**

Arriving at a fully explicated concourse of objects or items is important to the setup of the cards for the sorting. Researchers point to a variety of ways to arrive at these, such as from reviews of the formal literature, the gray literature, expert interviews, and other efforts. From the concourse, the q-set cards are selected, and these should be highly differentiated from each other. Researchers suggest that q-sets should be “somewhere between 40 and 80 statements” (Curt, 1994; Stainton Rogers, 1995, as cited in Watts & Stenner, 2005, p. 75).

To actualize this early test of a q-methodology on Qualtrics, the author brainstormed a range of features of graduate student research, including practices related to research topic selection, literature reviews, faculty support for the research, cost management, time management, the roles of concepts, tactics, and other dimensions. The elicitation reads as follows:

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Figure 2. A basic sequence for Q-Methodology setup and deployment on an online survey research suite



A Basic Sequence for Q-Methodology Setup and Deployment on an Online Survey Research Suite

In graduate-level higher education studies research related to educational technologies, the research project should...

1. Include full saturation in the literature review
2. Include partial review of the literature
3. Involve other co-researchers
4. Be a stand-alone research work
5. Be aligned with the graduate advisor's research
6. Involve multimodal informational resources
7. Include multiple educational technologies
8. Include well known educational technologies
9. Include open-source educational technologies
10. Be novel
11. Be publishable
12. Involve educational technology testing
13. Relate to the student researcher's biographical history
14. Be personally meaningful to the student researcher
15. Be low cost
16. Be high cost
17. Involve inherited (non-self-generated) datasets
18. Involve established research methods
19. Involve established data analytics methods

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20. Involve new research methods
21. Involve new data analytics methods
22. Be about a “hot” current issue
23. Be funded by government
24. Be funded by industry
25. Be secret and embargoed
26. Be achieved within deadline
27. Be closely supervised by the faculty advisory team
28. Be distantly supervised by the faculty advisory team
29. Be informed by a theory or theories
30. Be informed by a model or models
31. Be informed by a framework or frameworks
32. Be practically applicable
33. Involve data visualizations
34. Include diagrams and illustrations
35. Be based on graduate student researcher’s ambition for a future career
36. Involve travel
37. Be related to the physical location of the university
38. Involve a second language
39. Be done in a first language
40. Include a byline with the masters or doctoral committee members when published
41. Include some crediting of the masters or doctoral committee members
42. Capture the student researcher’s personality as a signature
43. Have the research costs borne by the university
44. Have the research costs borne by the student and the student’s family
45. Be prosocial
46. Be revolutionary
47. Lead to social change
48. Protect the status quo
49. Include patent-able discoveries
50. Provide research instruments available at no charge to other researchers
51. Provide research instruments for pay to other researchers
52. Challenge an existing model

From these 52 cards (yes, like a card deck), respondents to the q-methodology study (members of the p-set) are asked to Pick, Group, & Rank those objects into a q-sorting score sheet. [While one researcher suggested using Qualtric’s “Pick, Group, & Rank” question type for a q-methodology (Gaskin, Sept. 24, 2015), he suggested that the ranking within the categories could be used in the sort; however, for most practices, the categories on q-sort templates or score sheets themselves do not contain within category ranking but treat all objects within the templates as of equal value (Mandolesi, Nicholas, Naspetti, & Zanolli, 2015, p. 28).] The number of cells in each scoring sheet equals the number of cards to be sorted. There do not seem to be a “don’t know” or “other” opt-out options. For this setup, seven categories were used instead of the three, and there were limits placed on the amounts of items in each category to create the q-sort grid. (Table 7)

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*Table 7. A Q-Sort grid with seven categories*

Strongly Agree +3 (3)	Agree +2 (5)	Somewhat Agree +1 (8)	Neither Agree nor Disagree (neutral) 0 (20)	Somewhat Disagree -1 (8)	Disagree -2 (5)	Strongly Disagree -3 (3)

Figure 3 shows what this graphic elicitation may look like in Qualtrics. The items are in a stack to the left, and the various categories are to the right. There did not seem to be a way to technologically limit the number of items in a particular category through validation or through other means, so those item limits were included in the labels for the respective categories.

*Figure 3. An online Q-Sort on the Qualtrics research suite using a “pick, group, & rank” question type*



The Q-Sort

**Directions:** To the left, there are 52 items that need to be placed in the categories to the right. Notice that the categories have limits in terms of how many may be placed in each. If there are overages, the responses will not be considered valid for the q-sort. Make sure that all of the 52 items are placed before moving on to the second part of the q-methodology study.

In graduate-level higher education studies research related to educational technologies, the research project should...

**Items**

challenge an existing model

other researchers

researchers

Strongly agree (3 total only)	Agree (5 total only)	Somewhat agree (8 total only)
Neither agree nor disagree (20 total only)	Somewhat disagree (8 total only)	Disagree (5 total only)



Researchers suggest that randomizing the order of the elements in a q-sort may minimize order effects. Empirically, “items appearing near the end of the Q-Sort have less variance and more central placement” (Serfass & Sherman, 2013, p. p. 853). These higher levels of convergence and less variance in q-sorts have been attributed to item order effects. The co-researchers elaborate:

*Carelessness, or a lack of proper incentive, is probably one of the mechanisms that cause these item order effects. This tendency may stem from the simple fact that raters do not reevaluate item placements that they have already made. Instead, they simply fill in the open spaces in the distribution toward the end of a Q-Sort. Personality, compensation, intrinsic interest, and experience with the measure may all be important factors influencing these order effects. (Serfass & Sherman, 2013, p. p. 857)*

A walk-through of the draft q-methodology research in Qualtrics with 52 items suggests that the interface requires scrolling up and down to emplace the items. (In the mobile version, this would become tedious quickly.) The automated ranking by placement of the respective items in each category is not used for analysis per se by rank but may be useful to ensure that the total number of items in each category does not surpass the stated limits. (Figure 4) The ranking feature may be useful when the “cards” are not as numerous as in this case.

For the text-based debriefing, survey participants are asked to use the back button to see their responses, and the platform is sufficiently stable and reliable to enable this toggling (Figure 5). In some sources, this debriefing is described as an interview or a think-aloud exercise.

This research should result in two sets of data: the physical distribution of sorted “cards” and the text responses in the debriefing. (The modalities of the datasets may vary, with “cards” comprised of visuals, audio, video, or some combination of multimedia, and with the debriefing comprised of video, audio, uploaded files, or other data.)

It is possible to add more complex elicitations using Loop & Merge and piped text features in Qualtrics to customize the responses (along with Embedded Data to capture the dynamic information). More details about this trial q-methodology setup may be found in the Appendix, and the full online version may be found at [https://kstate.qualtrics.com/jfe/form/SV\\_eFGy8agDFWtil](https://kstate.qualtrics.com/jfe/form/SV_eFGy8agDFWtil).

Finally, Figure 6 shows a Preview version of this test online q-methodology experience and what happens when a respondent tries to bypass the q-sort without any minimum response. A validation reaction occurs.

Finally, on Qualtrics, it is possible to view individual responses one-by-one using the “View Response” option in the “Data & Analysis” section. This approach enables a fuller by-individual-respondent view, including the demographic information, the q-sort, and the q-methodology debriefing (by text response). (Figure 7)

Certainly, this process is not deemed successful if the enablement is only to engage in graphic elicitation of responses. The Qualtrics platform enables full download of the data in .csv, .tsv, .sav, and other formats. The Reports feature enables more close-in downloads of summary statistical tables as well as basic table data for the particular q-sort question, which is the way to access data that is easiest to run on external quantitative data analytics software tools. (The automated data visualizations of the data are not as useful and not particularly coherent with complex data.)

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Figure 4. Automatic application of ranking numbers per category, which may be used for totaling items per category

**Kansas State University**

The Q-Sort

**Directions:** To the left, there are 52 items that need to be placed in the categories to the right. Notice that the categories have limits in terms of how many may be placed in each. If there are overages, the responses will not be considered valid for the q-sort. Make sure that all of the 52 items are placed before moving on to the second part of the q-methodology study.

In graduate-level higher education studies research related to educational technologies, the research project should...

Items

Strongly agree (3 total only)	Agree (5 total only)	Somewhat agree (8 total only)
1 involve established research methods	1 include full saturation in the literature review	1 be achieved within deadline
2 be novel	2 involve data visualizations	2 involve established data analytics methods
3 be publishable	3 be practically applicable	3 involve new data analytics methods
	4 include diagrams and	4 involve new

## DISCUSSION

An online survey research suite may seem like a natural fit to q-method research, with the richness of visual engagements for respondents and statistics-enabled back-ends. However, depending on the software, the prior assertion may have its limits.

While the Pick, Group, & Rank question type fits the bill to some degree in terms of a graphic elicitation and the sense of placing “cards,” there are some down sides. There is not a clear way of using images or video or multimedia elements for the content items. To test the online q-method study, it is not possible to autogenerate test results within the numerical limits of the test categories. (Or if scripting could be used to limit these, the method is non-obvious within the limits of the platform.) If a sequential card sort is set up, that is also possible and may enable limits through custom validation, but then, to make this look of a piece, there cannot be any page breaks between the elements...and there has to be scripting to restrict double-use or multi-use of any of the items. Ideally, there would be something closer to the bell-shaped distribution of the q-sort grid. Also, the Pick, Group, & Rank question requires the use of mouse-actions, and there is not a keyboard shortcut option. This means that accessibility is a challenge. The data on the back end will require some work to ensure that it can be analyzed for a factor analysis in a third-party quantitative analytics tool.

## Setting Up and Running a Q-Methodology Study in an Online Survey Research Suite

Figure 5. Debriefing the Q-Methodology by eliciting follow-on text responses from the p-set respondents



Figure 6. The validation reaction in the Q-Methodology survey preview

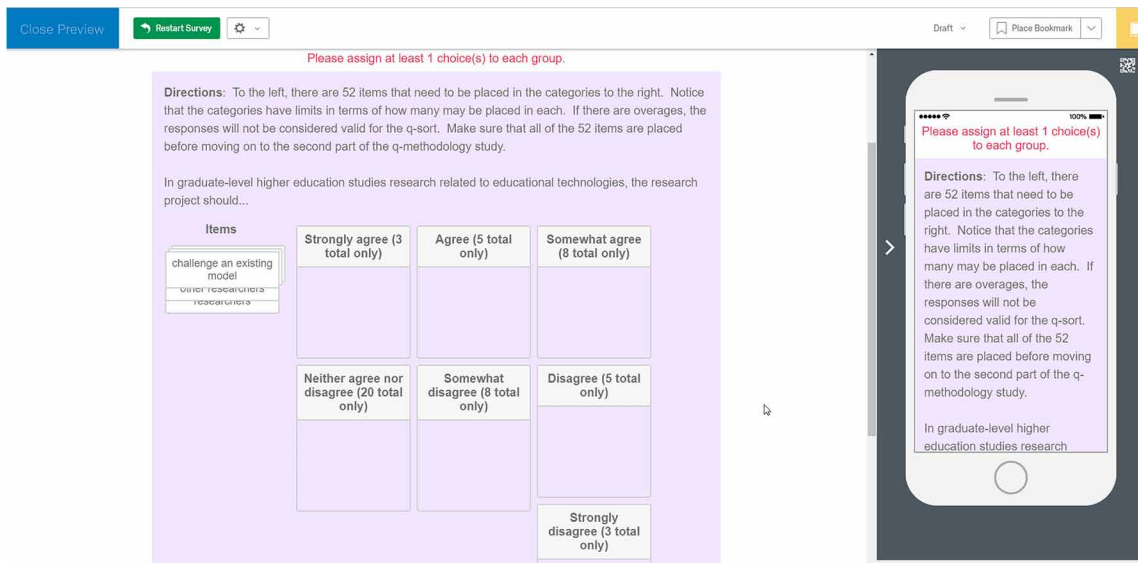
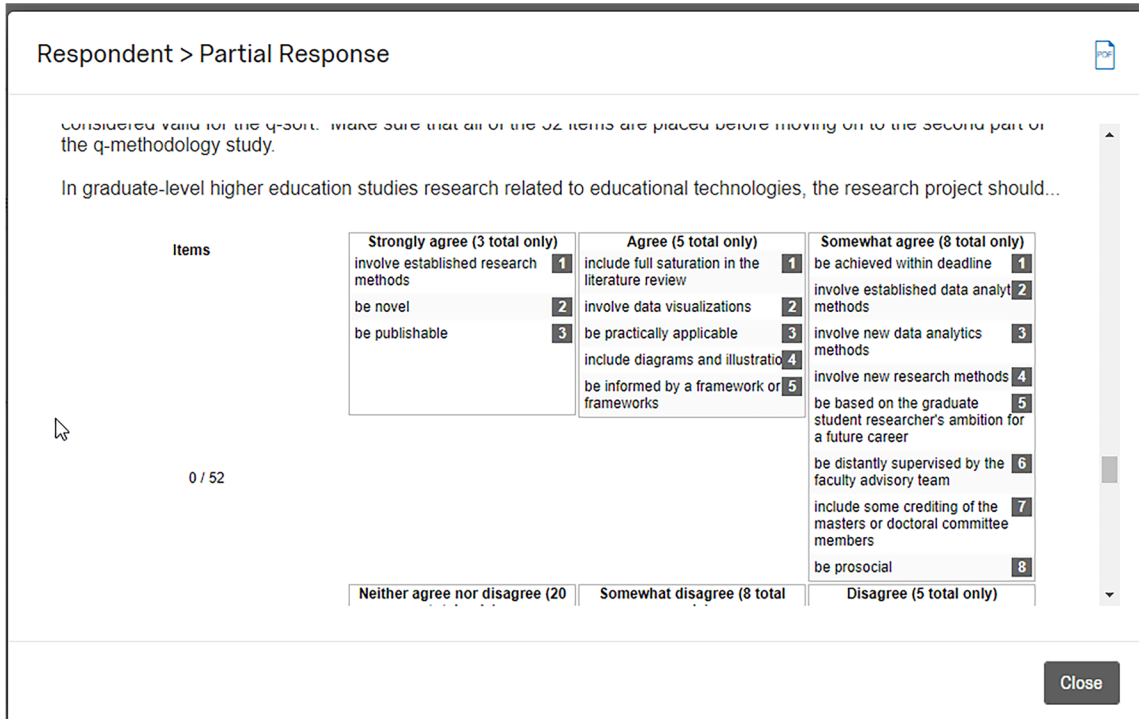


Figure 7. A scrollable individual response view online to view holistic respondent-by-respondent data



Some postings on Qualtrics discussion forums may suggest that there are ways to control the drag-and-drop box height based on possible amounts of choices available. It is quite possible that as the hosted Qualtrics research platform is updated that changes may make online q-methodologies more or less possible to deploy effectively.

As compared to other research methods, an advantage of q-methodology is perceived as the following: "Viewpoints do not represent the views of a particular individual; rather, they are a constructed aggregate that represents the shared subjectivity of those who loaded significantly on that factor" (Iofrida, De Luca, Gulisano, & Strano, 2018, p. 52).

Researchers who have used the q-method caveat it in several ways. One is that it "makes no claim to have identified viewpoints that are *consistent within individuals* across time." (Watts & Stenner, 2005, p. 85). Another downside is the forcing of the data "into a normal distribution grid (Iofrida, De Luca, Gulisano, & Strano, 2018, p. 52). There are additional weaknesses. If a q-set is incomplete, those weaknesses will affect the research findings. If a researcher does not know a field sufficiently, he / she / they may not know how to interpret the results effectively. Also, if a researcher does not have empathy with others, he or she will not be able to make use of the observed sets of opinion types and the resulting q-sort profiles. A researcher needs to see the internal consistencies among the differing profiles and to be able to understand respondent interests inherent in the data.

This work demands some sophistication in terms of quantitative and qualitative data analytics. There are limits from the p-set of respondents, in their low number, in self-reportage and the gaps between self-claims and actual actions. The lack of wider knowledge of this research method may also be a de-

limiter in terms of how receptive professional audiences may be to this method. Q-method does bring something unique to qualitative and mixed methods research (Watts & Stenner, 2005).

## **FUTURE RESEARCH DIRECTIONS**

This work offers an early cobbled approach to deploying an online q-methodology research study. Certainly, there are ways to improve both the card-sorting and the post-sorting debriefing elicitations and data captures. This work may be built upon with more multimodal “cards” for the sorting. There can be follow-on work with a pilot q-methods study using Qualtrics and the carrying through of this approach with real-world data analyses and applied insights. Real-world validation of online q-methods findings would also provide rich ways to advance this work.

## **CONCLUSION**

This work provides a first walk-through of using the Qualtrics Research Suite for a potential online q-methods study. In this case, only the author completed the initial walk-through of the q-sort. This initial effort is sufficiently promising though to suggest that others may advance this work further and use the platform for a full q-methods study deployed to a full p-set, for a pilot study and more.

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## KEY TERMS AND DEFINITIONS

**Concourse:** A full created selection of possible statements (from which a subset or “Q sample” is drawn for the q-sort activity).

**Factor Analysis:** A quantitative statistical analysis approach to identify underlying (latent) factors or components in observed or survey data to understand the most influential factors on a construct.

**Factor Interpretation:** The definition and framing of an identified factor from a statistical factor analysis based on its component parts.

**Factor Scores:** A numerical value showing a respondent’s relative standing on a factor.

**Graphic Elicitation:** Visual elicitation, the use of a visual construct to elicit responses from research respondents.

**P-Set:** Respondents in a Q-methodology study.

**Q-Methodology:** A standard research methodology to identify insider/people’s self-reported “subjectivities” through a q-sort method.

**Q-Sample:** The statements that will be presented to Q-methodology research participants (a selective portion of the larger concourse).

**Q-Sort:** The research participant work of sorting the statements/cards in the Q-Methodology research.

**Q-Sort Grid (Q-Sort Score Sheet, Q-Sort Template, Q-Sort Card Grid, Q-Board):** The visual table or grid on which q-set statement cards (or other information objects) are sorted.

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## APPENDIX

The following contains the q-sort text from the trial q-sort survey. The earlier parts with the informed consent and demographic data elicitation were not included. (Some of the open-shared demographics blocks of questions were created by Qualtrics. While they are for customer use, it is not clear if the survey contents are copyrighted or not.) Also, the text eliciting responses here was set up mostly as placeholder text, without in-depth consideration of the “condition of instructions” (Paige, 2015a, p. 76), which are critical for the research.

### Q26

The Q-Sort.

Box 1.



### Q27

*Directions:* In Table 8, there are 52 items that need to be placed in the categories in the table header. Notice that the categories have limits in terms of how many may be placed in each. If there are overages, the responses will not be considered valid for the q-sort. Make sure that all of the 52 items are placed before moving on to the second part of the q-methodology study.

*Table 8. In graduate-level higher education studies research related to educational technologies, the research project should...*

Strongly agree (3 total only)	Agree (5 total only)	Somewhat agree (8 total only)	Neither agree nor disagree (20 total only)	Somewhat disagree (8 total only)	Disagree (5 total only)	Strongly disagree (3 total only)
_____ include full saturation in the literature review (1)	_____ include full saturation in the literature review (1)	_____ include full saturation in the literature review (1)	_____ include full saturation in the literature review (1)	_____ include full saturation in the literature review (1)	_____ include full saturation in the literature review (1)	_____ include full saturation in the literature review (1)
_____ include partial review of the literature (2)	_____ include partial review of the literature (2)	_____ include partial review of the literature (2)	_____ include partial review of the literature (2)	_____ include partial review of the literature (2)	_____ include partial review of the literature (2)	_____ include partial review of the literature (2)
_____ involve other co-researchers (3)	_____ involve other co-researchers (3)	_____ involve other co-researchers (3)	_____ involve other co-researchers (3)	_____ involve other co-researchers (3)	_____ involve other co-researchers (3)	_____ involve other co-researchers (3)

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*Table 8. Continued*

<b>Strongly agree (3 total only)</b>	<b>Agree (5 total only)</b>	<b>Somewhat agree (8 total only)</b>	<b>Neither agree nor disagree (20 total only)</b>	<b>Somewhat disagree (8 total only)</b>	<b>Disagree (5 total only)</b>	<b>Strongly disagree (3 total only)</b>
_____ be a stand-alone research work (4)	_____ be a stand-alone research work (4)	_____ be a stand-alone research work (4)	_____ be a stand-alone research work (4)	_____ be a stand-alone research work (4)	_____ be a stand-alone research work (4)	_____ be a stand-alone research work (4)
_____ be aligned with the graduate advisor's research (5)	_____ be aligned with the graduate advisor's research (5)	_____ be aligned with the graduate advisor's research (5)	_____ be aligned with the graduate advisor's research (5)	_____ be aligned with the graduate advisor's research (5)	_____ be aligned with the graduate advisor's research (5)	_____ be aligned with the graduate advisor's research (5)
_____ involve multimodal informational resources (6)	_____ involve multimodal informational resources (6)	_____ involve multimodal informational resources (6)	_____ involve multimodal informational resources (6)	_____ involve multimodal informational resources (6)	_____ involve multimodal informational resources (6)	_____ involve multimodal informational resources (6)
_____ include multiple educational technologies (7)	_____ include multiple educational technologies (7)	_____ include multiple educational technologies (7)	_____ include multiple educational technologies (7)	_____ include multiple educational technologies (7)	_____ include multiple educational technologies (7)	_____ include multiple educational technologies (7)
_____ include well known educational technologies (8)	_____ include well known educational technologies (8)	_____ include well known educational technologies (8)	_____ include well known educational technologies (8)	_____ include well known educational technologies (8)	_____ include well known educational technologies (8)	_____ include well known educational technologies (8)
_____ include open-source educational technologies (9)	_____ include open-source educational technologies (9)	_____ include open-source educational technologies (9)	_____ include open-source educational technologies (9)	_____ include open-source educational technologies (9)	_____ include open-source educational technologies (9)	_____ include open-source educational technologies (9)
_____ be novel (10)	_____ be novel (10)	_____ be novel (10)	_____ be novel (10)	_____ be novel (10)	_____ be novel (10)	_____ be novel (10)
_____ be publishable (11)	_____ be publishable (11)	_____ be publishable (11)	_____ be publishable (11)	_____ be publishable (11)	_____ be publishable (11)	_____ be publishable (11)
_____ involve educational technology testing (12)	_____ involve educational technology testing (12)	_____ involve educational technology testing (12)	_____ involve educational technology testing (12)	_____ involve educational technology testing (12)	_____ involve educational technology testing (12)	_____ involve educational technology testing (12)
_____ relate to the student researcher's biographical history (13)	_____ relate to the student researcher's biographical history (13)	_____ relate to the student researcher's biographical history (13)	_____ relate to the student researcher's biographical history (13)	_____ relate to the student researcher's biographical history (13)	_____ relate to the student researcher's biographical history (13)	_____ relate to the student researcher's biographical history (13)
_____ be personally meaningful to the student researcher (14)	_____ be personally meaningful to the student researcher (14)	_____ be personally meaningful to the student researcher (14)	_____ be personally meaningful to the student researcher (14)	_____ be personally meaningful to the student researcher (14)	_____ be personally meaningful to the student researcher (14)	_____ be personally meaningful to the student researcher (14)
_____ be low cost (15)	_____ be low cost (15)	_____ be low cost (15)	_____ be low cost (15)	_____ be low cost (15)	_____ be low cost (15)	_____ be low cost (15)
_____ be high cost (16)	_____ be high cost (16)	_____ be high cost (16)	_____ be high cost (16)	_____ be high cost (16)	_____ be high cost (16)	_____ be high cost (16)

*continues on following page*



Table 8. Continued

Strongly agree (3 total only)	Agree (5 total only)	Somewhat agree (8 total only)	Neither agree nor disagree (20 total only)	Somewhat disagree (8 total only)	Disagree (5 total only)	Strongly disagree (3 total only)
_____ involve inherited (non-self-generated) datasets (17)	_____ involve inherited (non-self-generated) datasets (17)	_____ involve inherited (non-self-generated) datasets (17)	_____ involve inherited (non-self-generated) datasets (17)	_____ involve inherited (non-self-generated) datasets (17)	_____ involve inherited (non-self-generated) datasets (17)	_____ involve inherited (non-self-generated) datasets (17)
_____ involve established research methods (18)	_____ involve established research methods (18)	_____ involve established research methods (18)	_____ involve established research methods (18)	_____ involve established research methods (18)	_____ involve established research methods (18)	_____ involve established research methods (18)
_____ involve established data analytics methods (19)	_____ involve established data analytics methods (19)	_____ involve established data analytics methods (19)	_____ involve established data analytics methods (19)	_____ involve established data analytics methods (19)	_____ involve established data analytics methods (19)	_____ involve established data analytics methods (19)
_____ involve new research methods (20)	_____ involve new research methods (20)	_____ involve new research methods (20)	_____ involve new research methods (20)	_____ involve new research methods (20)	_____ involve new research methods (20)	_____ involve new research methods (20)
_____ involve new data analytics methods (21)	_____ involve new data analytics methods (21)	_____ involve new data analytics methods (21)	_____ involve new data analytics methods (21)	_____ involve new data analytics methods (21)	_____ involve new data analytics methods (21)	_____ involve new data analytics methods (21)
_____ be about a “hot” current issue (22)	_____ be about a “hot” current issue (22)	_____ be about a “hot” current issue (22)	_____ be about a “hot” current issue (22)	_____ be about a “hot” current issue (22)	_____ be about a “hot” current issue (22)	_____ be about a “hot” current issue (22)
_____ be funded by the government (23)	_____ be funded by the government (23)	_____ be funded by the government (23)	_____ be funded by the government (23)	_____ be funded by the government (23)	_____ be funded by the government (23)	_____ be funded by the government (23)
_____ be funded by industry (24)	_____ be funded by industry (24)	_____ be funded by industry (24)	_____ be funded by industry (24)	_____ be funded by industry (24)	_____ be funded by industry (24)	_____ be funded by industry (24)
_____ be secret and embargoed (25)	_____ be secret and embargoed (25)	_____ be secret and embargoed (25)	_____ be secret and embargoed (25)	_____ be secret and embargoed (25)	_____ be secret and embargoed (25)	_____ be secret and embargoed (25)
_____ be achieved within deadline (26)	_____ be achieved within deadline (26)	_____ be achieved within deadline (26)	_____ be achieved within deadline (26)	_____ be achieved within deadline (26)	_____ be achieved within deadline (26)	_____ be achieved within deadline (26)
_____ be closely supervised by the faculty advisory team (27)	_____ be closely supervised by the faculty advisory team (27)	_____ be closely supervised by the faculty advisory team (27)	_____ be closely supervised by the faculty advisory team (27)	_____ be closely supervised by the faculty advisory team (27)	_____ be closely supervised by the faculty advisory team (27)	_____ be closely supervised by the faculty advisory team (27)
_____ be distantly supervised by the faculty advisory team (28)	_____ be distantly supervised by the faculty advisory team (28)	_____ be distantly supervised by the faculty advisory team (28)	_____ be distantly supervised by the faculty advisory team (28)	_____ be distantly supervised by the faculty advisory team (28)	_____ be distantly supervised by the faculty advisory team (28)	_____ be distantly supervised by the faculty advisory team (28)
_____ be informed by a theory or theories (29)	_____ be informed by a theory or theories (29)	_____ be informed by a theory or theories (29)	_____ be informed by a theory or theories (29)	_____ be informed by a theory or theories (29)	_____ be informed by a theory or theories (29)	_____ be informed by a theory or theories (29)

continues on following page

Table 8. Continued

Strongly agree (3 total only)	Agree (5 total only)	Somewhat agree (8 total only)	Neither agree nor disagree (20 total only)	Somewhat disagree (8 total only)	Disagree (5 total only)	Strongly disagree (3 total only)
_____ be informed by a model or models (30)	_____ be informed by a model or models (30)	_____ be informed by a model or models (30)	_____ be informed by a model or models (30)	_____ be informed by a model or models (30)	_____ be informed by a model or models (30)	_____ be informed by a model or models (30)
_____ be informed by a framework or frameworks (31)	_____ be informed by a framework or frameworks (31)	_____ be informed by a framework or frameworks (31)	_____ be informed by a framework or frameworks (31)	_____ be informed by a framework or frameworks (31)	_____ be informed by a framework or frameworks (31)	_____ be informed by a framework or frameworks (31)
_____ be practically applicable (32)	_____ be practically applicable (32)	_____ be practically applicable (32)	_____ be practically applicable (32)	_____ be practically applicable (32)	_____ be practically applicable (32)	_____ be practically applicable (32)
_____ involve data visualizations (33)	_____ involve data visualizations (33)	_____ involve data visualizations (33)	_____ involve data visualizations (33)	_____ involve data visualizations (33)	_____ involve data visualizations (33)	_____ involve data visualizations (33)
_____ include diagrams and illustrations (34)	_____ include diagrams and illustrations (34)	_____ include diagrams and illustrations (34)	_____ include diagrams and illustrations (34)	_____ include diagrams and illustrations (34)	_____ include diagrams and illustrations (34)	_____ include diagrams and illustrations (34)
_____ be based on the graduate student researcher's ambition for a future career (35)	_____ be based on the graduate student researcher's ambition for a future career (35)	_____ be based on the graduate student researcher's ambition for a future career (35)	_____ be based on the graduate student researcher's ambition for a future career (35)	_____ be based on the graduate student researcher's ambition for a future career (35)	_____ be based on the graduate student researcher's ambition for a future career (35)	_____ be based on the graduate student researcher's ambition for a future career (35)
_____ involve travel (36)	_____ involve travel (36)	_____ involve travel (36)	_____ involve travel (36)	_____ involve travel (36)	_____ involve travel (36)	_____ involve travel (36)
_____ be related to the physical location of the university (37)	_____ be related to the physical location of the university (37)	_____ be related to the physical location of the university (37)	_____ be related to the physical location of the university (37)	_____ be related to the physical location of the university (37)	_____ be related to the physical location of the university (37)	_____ be related to the physical location of the university (37)
_____ involve a second language (38)	_____ involve a second language (38)	_____ involve a second language (38)	_____ involve a second language (38)	_____ involve a second language (38)	_____ involve a second language (38)	_____ involve a second language (38)
_____ be done in a first language (39)	_____ be done in a first language (39)	_____ be done in a first language (39)	_____ be done in a first language (39)	_____ be done in a first language (39)	_____ be done in a first language (39)	_____ be done in a first language (39)
_____ include a byline with the masters or doctoral committee members when published (40)	_____ include a byline with the masters or doctoral committee members when published (40)	_____ include a byline with the masters or doctoral committee members when published (40)	_____ include a byline with the masters or doctoral committee members when published (40)	_____ include a byline with the masters or doctoral committee members when published (40)	_____ include a byline with the masters or doctoral committee members when published (40)	_____ include a byline with the masters or doctoral committee members when published (40)
_____ include some crediting of the masters or doctoral committee members (41)	_____ include some crediting of the masters or doctoral committee members (41)	_____ include some crediting of the masters or doctoral committee members (41)	_____ include some crediting of the masters or doctoral committee members (41)	_____ include some crediting of the masters or doctoral committee members (41)	_____ include some crediting of the masters or doctoral committee members (41)	_____ include some crediting of the masters or doctoral committee members (41)

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**Setting Up and Running a Q-Methodology Study in an Online Survey Research Suite**

*Table 8. Continued*

<b>Strongly agree (3 total only)</b>	<b>Agree (5 total only)</b>	<b>Somewhat agree (8 total only)</b>	<b>Neither agree nor disagree (20 total only)</b>	<b>Somewhat disagree (8 total only)</b>	<b>Disagree (5 total only)</b>	<b>Strongly disagree (3 total only)</b>
_____ capture the student researcher's personally as a signature (42)	_____ capture the student researcher's personally as a signature (42)	_____ capture the student researcher's personally as a signature (42)	_____ capture the student researcher's personally as a signature (42)	_____ capture the student researcher's personally as a signature (42)	_____ capture the student researcher's personally as a signature (42)	_____ capture the student researcher's personally as a signature (42)
_____ have the research costs borne by the university (43)	_____ have the research costs borne by the university (43)	_____ have the research costs borne by the university (43)	_____ have the research costs borne by the university (43)	_____ have the research costs borne by the university (43)	_____ have the research costs borne by the university (43)	_____ have the research costs borne by the university (43)
_____ have the research costs borne by the student and the student's family (44)	_____ have the research costs borne by the student and the student's family (44)	_____ have the research costs borne by the student and the student's family (44)	_____ have the research costs borne by the student and the student's family (44)	_____ have the research costs borne by the student and the student's family (44)	_____ have the research costs borne by the student and the student's family (44)	_____ have the research costs borne by the student and the student's family (44)
_____ be prosocial (45)	_____ be prosocial (45)	_____ be prosocial (45)	_____ be prosocial (45)	_____ be prosocial (45)	_____ be prosocial (45)	_____ be prosocial (45)
_____ be revolutionary (46)	_____ be revolutionary (46)	_____ be revolutionary (46)	_____ be revolutionary (46)	_____ be revolutionary (46)	_____ be revolutionary (46)	_____ be revolutionary (46)
_____ lead to social change (47)	_____ lead to social change (47)	_____ lead to social change (47)	_____ lead to social change (47)	_____ lead to social change (47)	_____ lead to social change (47)	_____ lead to social change (47)
_____ protect the status quo (48)	_____ protect the status quo (48)	_____ protect the status quo (48)	_____ protect the status quo (48)	_____ protect the status quo (48)	_____ protect the status quo (48)	_____ protect the status quo (48)
_____ include patent-able discoveries (49)	_____ include patent-able discoveries (49)	_____ include patent-able discoveries (49)	_____ include patent-able discoveries (49)	_____ include patent-able discoveries (49)	_____ include patent-able discoveries (49)	_____ include patent-able discoveries (49)
_____ provide research instruments available at no charge to other researchers (50)	_____ provide research instruments available at no charge to other researchers (50)	_____ provide research instruments available at no charge to other researchers (50)	_____ provide research instruments available at no charge to other researchers (50)	_____ provide research instruments available at no charge to other researchers (50)	_____ provide research instruments available at no charge to other researchers (50)	_____ provide research instruments available at no charge to other researchers (50)
_____ provide research instruments for-pay to other researchers (51)	_____ provide research instruments for-pay to other researchers (51)	_____ provide research instruments for-pay to other researchers (51)	_____ provide research instruments for-pay to other researchers (51)	_____ provide research instruments for-pay to other researchers (51)	_____ provide research instruments for-pay to other researchers (51)	_____ provide research instruments for-pay to other researchers (51)
_____ challenge an existing model (52)	_____ challenge an existing model (52)	_____ challenge an existing model (52)	_____ challenge an existing model (52)	_____ challenge an existing model (52)	_____ challenge an existing model (52)	_____ challenge an existing model (52)

End of Block: QSort

Start of Block: Debriefing

**Q28**

Q-Methodology Debriefing.

**Q29**

An important part of the q-methodology involves having the respondent explain his / her responses to the q-sort...in three main categories: the high agreement, the high disagreement, and the neutral issues.

**Q30**

Please review your responses in the q-sort step just prior. Please explain your “strongly agree,” “agree” and “somewhat agree” selections in the text box below.

You can use the back arrow to review your recorded responses.

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**Q31**

Please review your responses in the q-sort step above. Please explain your “neither agree nor disagree” selections in the text box below.

You can use the back arrow to review your recorded responses.

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**Q32**

Please review your responses in the q-sort step above. Please explain your “strongly disagree,” “disagree” and “somewhat disagree” selections in the text box below.

You can use the back arrow to review your recorded responses.

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End of Block: Debriefing

## Chapter 23

# Case Study as a Method of Qualitative Research

**Naila Iqbal Khan**

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### **ABSTRACT**

*Qualitative case study methodology provides tools for researchers to study complex phenomena within their contexts. When the approach is applied correctly, it becomes a valuable method for health science research to develop theory, evaluate programs, and develop interventions. The purpose of this chapter is to guide the novice researcher in identifying the key elements for designing and implementing qualitative case study research projects. An overview of the types of case study designs is provided along with general recommendations for writing the research questions, developing propositions, determining the “case” under study, binding the case, and a discussion of data sources and triangulation. To facilitate application of these principles, clear examples of research questions, study propositions, and the different types of case study designs are provided. The great contribution of qualitative research is the culturally specific and contextually rich data it produces. This is proving critical in the design of comprehensive solutions to general problems in developing countries.*

### **INTRODUCTION**

The qualitative vs quantitative research debate method is as old as the research itself. The researchers have definite differences on the utility of both the methods in different situations. Qualitative methods are now becoming popular in social sciences, development research, anthropology and social studies and particularly in the field economics. Quantitative research methods use to dominate these fields earlier but the social scientists have now started gaining from a bigger reservoir of methodologies as they tackle international economic and development related problems.

Qualitative methods emerged as important tools in the field of applied research largely because; they are providing valuable insights into the local perspectives, perceptions and thoughts of study populations. Qualitative methods are often contextual.

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## Case Study as a Method of Qualitative Research

Qualitative research provides diverse data of different groups of population based on their perception about an event. We know that not only social problems but even political, economic and cultural-ethnic problems also have solutions hidden in society's values and beliefs. Data from social intervention is important in the design of comprehensive solutions to specific problems in developing countries. Social scientists, economists and political leaders have now come to recognize that economic or financial solutions are only partial remedies. Rather, the success of a new intervention like demonetisation or female reservation – that is, whether it actually reaches the people it is intended to help – rests also on how well it addresses socio-behavioural factors such as cultural norms, ethnic identities, economic diversity, gender norms, stigma, and socioeconomic status.

A popular method of qualitative research is the case study method (Stake, 1995; Yin, 1989) which examines in depth “purposive samples” to better understand a phenomenon hence, smaller but focused samples are more often used than large samples which may also be conducted by the same or related researchers or research centers. To help navigate the heterogeneous landscape of qualitative research, one can further think of qualitative inquiry in terms of ‘means’ and ‘orientation’ (Pernecky, 2016).

This particular chapter presents the case study<sup>1</sup> as a type of qualitative research. Its aim is to give a detailed description of a case study – its definition, some classifications, Evolution and comparison of case study with its counterparts and Implications for Practice in the form of several advantages and disadvantages – in order to provide a better understanding of this widely used type of qualitative approach.

Qualitative methods of research, as the name suggests, generally aim to understand the experiences and attitudes of citizens, or the community. These methods aim to answer questions about the ‘what’, ‘how’ or ‘why’ i.e. the qualitative connotations of a phenomenon rather than ‘how many’ or ‘how much’, which are answered by quantitative methods.

Qualitative methods are often appropriate if we want to know that how a community or individuals within it perceive a particular issue. If one wants to understand the perspectives of participants; or explore the meaning they give to the phenomena; or observe a process in depth then qualitative research methodology is appropriate. In this phenomenon called demonetisation this *case study* through *qualitative* research approach is appropriate to know the psyche of people or citizens of India before and after the phenomenon.

How case studies are viewed is an important and pertinent question; some authors see them as a qualitative research type (Baxter and Jack 2008; Flyvbjerg 2006, 2011; Sagadin 2004; Simons 2009; Stake 2005; Sturman 1997; Verschuren 2003), while others perceive them to be a qualitative research method (George and Bennett 2005; Gerring 2004). In comparison to other types of qualitative research, case studies have been little understood both from a methodological point of view, where disagreements exist about whether case studies should be considered a research method or a research type, and from a content point of view, where there are ambiguities regarding what should be considered a case or research subject. Many researchers emphasise disadvantages of case studies, where they try to refute some of the criticisms concerning case studies, particularly in comparison to quantitative research approaches.

In this chapter the author wants to demonstrate that case studies are more than just a methodological choice; therefore, it's better to define case studies as a qualitative research type. Although case studies have often been considered to be part of qualitative research and methodology, they may also be quantitative or contain a combination of qualitative and quantitative approaches. Qualitative research is characterized by an interpretative paradigm, which emphasizes subjective experiences and the meanings they have for an individual. Therefore, the subjective views of a researcher on a particular situation play a vital part in the study results. The most important characteristic of qualitative research is its idiographic approach

(Vogrinc, 2008) which emphasizes an individual's perspective on the investigative situation, process, relations, etc. Qualitative and quantitative results should complement each other to create a meaningful whole according to the object and purpose of purpose of the investigation (Sagadin, 2004).

Qualitative research is a type of scientific research which consists of an investigation that finds answers to a question, systematically uses a predefined set of procedures to answer the various questions; it collects evidence and produces findings that were not pre-determined and sought findings which are applicable beyond the immediate boundaries of the study.

## **EVOLUTION OF THE TECHNIQUE**

The report of a person, group, or situation which has been studied for a particular research purpose can be summarised in the form of a case study. If the case study, for instance, is about a group, it describes the behaviour of the whole group, and not the behaviour of each individual in the group.

Case studies can be qualitative and/or quantitative. It is quite likely, as Stake (1994) points out, that researchers doing case study research are calling it by another name. Case studies, as a research design, are also being conducted across many disciplines. Case studies have been considered a research strategy or design, an evaluation method, and a reporting mode. Case studies can also be produced by following a formal research method, but we can also use case study as a research type.

## **How the Case Study Method Is Applied in Different Disciplines of Study**

Now a day, in many disciplines and professions, ranging from psychology, anthropology, sociology, and political science to education, clinical science, social work, and administrative science, case studies are gaining popularity. A case may be simple or complex. Researchers may study a single case or multiple cases. In multiple case studies, researchers study cases in depth individually as well as look across cases for similarities and differences. For instance, clinical science has produced both well-known case studies of individuals and also case studies of clinical practices. However, when "case" is used in an abstract sense, as in a claim, a proposition, or an argument, such a case can be the subject of many research methods, not just case study research.

Case studies may involve both qualitative and quantitative research methods. The strength of qualitative research is that it provides us with descriptions of how people experience a given research issue. It provides information about the "human" side of an issue – that is, the behaviours, beliefs, opinions, emotions, and relationships of individuals.

## **Quantitative and Qualitative Research Compared**

Quantitative and qualitative research methods differ primarily in (see Table 1):

- Their analytical objectives
- The types of questions they pose
- The types of data collection instruments
- The forms of data produced
- The degree of flexibility

## Case Study as a Method of Qualitative Research

Table 1. Quantitative and qualitative research methods compared

	Quantitative	Qualitative
<b>What it does generally</b>	Tries to confirm hypotheses about phenomena	Tries to explain the phenomena
	Responses to questions are categorized very rigidly	flexible, iterative style of eliciting and categorizing responses to questions
	Use highly structured methods	Use semi-structured methods
<b>Main objectives of method</b>	Variation quantification	Variation is described
	Relationships are predicted	Relationships described
	Characteristics of a population described	Group norms described
<b>Questions</b>	Closed-ended	Open-ended
<b>Data</b>	Numerical	Textual
<b>Study Design Flexibility</b>	Study design is stable from beginning to end	Some aspects of the study are flexible (for example, the addition, exclusion, or wording of particular interview questions)
	Participant responses do not influence or determine how and which questions researchers ask next	Participant responses affect how and which questions researchers ask next
	Study design is subject to statistical assumptions and conditions	Study design is iterative, that is, data collection and research questions are adjusted according to what is learned

## Qualitative Methods: A Better Option for Research

When we start to collect the data for any research work, either we find sources related to our work or we prepare a questionnaire. Qualitative methods put open-ended questions and it gives the participants the opportunity to respond in their own words. The participants are not forced to reply the fix responses. Open-ended questions are more useful as:

- The participant feels free to answer
- Researcher may get an answer which is out of the box and rich in content

It allows the researcher the ease to probe initial participant responses – that is, to ask why or how?

This chapter explains how to use the case study method and how to apply it to an example case study project designed to examine how one set of users, non-profit organizations, individuals and other organizations react and behave to a certain governmental decision. The study examines the issue of whether or not the government’s decision is beneficial in some way to the participants. Case studies emphasize detailed contextual analysis of a limited number of events or conditions and their relationship. Critics of the case study method believe that the study of a small number of cases can offer no grounds for establishing reliability or generality of findings. Others feel that the intense exposure to study of the case biases the findings. Some dismiss case study research as useful only as an exploratory tool. Yet researchers continue to use the case study research method with success in carefully planned and crafted studies of real-life situations, issues, and problems.

This introduction to case study research draws upon their work and proposes six important steps that should be used:



1. **The Research Questions are Determined:** The researcher first tries to establish the focus of the study by framing questions about the situation or problem to be studied and also determines a purpose for the study. The research object in a case study is often a program, an entity, a person, or a group of people. Each object is likely to be intricately connected to political, social, historical, and personal issues, providing wide ranging possibilities for questioning. Case study research generally answers one or more questions which begin with “how” or “why” which are targeted to a limited number of events or conditions and their inter-relationships.
2. **Data Gathering and Analysis Techniques Selection:** During the design phase of case study research, the researcher determines what approaches to use in selecting single or multiple real-life cases to examine in depth and which instruments and data gathering approaches to use. When using multiple cases, each case is treated as a single case. Conclusions in each case can then be used as information contributing to the whole study, but each case remains a single case. Exemplary case studies carefully select cases and carefully examine the choices available from among many research tools available in order to increase the validity of the study. A key strength of the case study method involves using multiple sources and techniques in the data gathering process.
3. **Data Collection Preparation:** Case study research generates a large amount of data from multiple sources; hence systematic organization of the data is important to prevent the researcher from becoming overwhelmed by the amount of data and to prevent the researcher from losing sight of the original research purpose and questions. Exemplary case studies prepare good training programs for investigators, establish clear protocols and procedures in advance of investigator field work, and conduct a pilot study in advance of moving into the field in order to remove obvious barriers and problems. Researchers need to anticipate key problems and events, identify key people, prepare letters of introduction, establish rules for confidentiality, and actively seek opportunities to revisit and revise the research design in order to address and add to the original set of research questions.
4. **Data Collection:** Researchers carefully observe the object of the case study and identify causal factors associated with it. Renegotiation of arrangements with the objects of the study or addition of questions to interviews may be necessary as the study progresses. Case study research is flexible, but all the changes are documented systematically. To categorize and reference data some case studies use field notes so that it is readily available for subsequent reinterpretation. Field notes record feelings and intuitive hunches, pose questions, and document the work in progress. They note testimonies, stories, and illustrations which can be used in later reports. They may warn the clients about the bias for some queries because of the detailed exposure of the client to special attention, or to avoid a pattern which is emerging. Maintaining the relationship between the issue and the evidence is mandatory. Qualitative data collection methods include direct interaction with individuals on a one to one basis or direct interaction with individuals in a group setting. These methods are time consuming, therefore data is usually collected from a smaller sample- therefore this makes qualitative research more expensive. The benefit of the qualitative approach is that the information is richer and has a deeper insight into the phenomenon under study. The main methods for collecting qualitative data are unstructured, semi structure, and structured. Qualitative interviews should be fairly informal and participants feel they are taking part in a conversation or discussion rather than in a formal question and answer situation. Skills are required and involved in successful qualitative research approaches that require careful consideration and planning. A good qualitative research involves thought, preparation, the development of the interview schedule, and conducting and analysing the interview data with care and consideration.

## **Case Study as a Method of Qualitative Research**

The use of focus groups is sometimes used when it is better to obtain information from a group rather than individuals. Group interviews can be used when limited resources (time, manpower, finances), the phenomena being researched requires a collective discussion in order to understand the circumstances, behaviour or opinions, and greater insights may be developed of the group dynamic - or cause and consequence. The aim of the focus group is to make use of participants' feelings, perceptions and opinions. This method requires the researcher to use a range of skills including group skills, facilitating, moderating, listening/observing, and analysis.

Observation involves may take place in natural settings and involve the researcher taking lengthy and descriptive notes of what is happening. It is argued that there are limits to the situations that can be observed in their 'natural' settings and that the presence of the research may lead to problems with validity. Sometimes, the researcher becomes or needs to become a participant observer, where they are taking part in the situation in order to be accepted and further understand the workings of the social phenomenon. Observation can sometimes obtain more reliable information about certain things - for example, how people actually behave (although it may not find out the reasons for why they behave in a particular way). Observation can also serve as a technique for verifying of nullifying information provided in face to face encounters. People or environment can be observed. When environment is researched, it can provide valuable background information that may inform other aspects of the research. Techniques for collecting data through observation include written descriptions, video recording, photographs and artefacts, and documentation.

Action research doesn't just involve asking about it, it involves doing it. Action Research is a framework that is collaborative, there is a practical intervention made - i.e. you do something to make a change or intervention in a situation that you research, the researcher will be actively involved in the planned intervention, and checklands fma model i.e., f - framework of ideas; m - methodology being applied; A - area of concern.

Self-Study is another data collection technique. Consider an area of your work that you might want to observe in order to get an answer, find out more or gain a better understanding. Think plan about: (1) What your aim/purpose is? (2) What type of permission you may need to take? (3) What your role/presence will be? (4) How you will record your observation? (5) What you will record? (6) What you will do with your findings.

5. **Data Analysis and Evaluation:** The researcher examines raw data using many interpretations in order to find linkages between the research object and the outcomes with reference to the original research questions. The case study method, with its use of multiple data collection methods and analysis techniques, provides researchers with opportunities to triangulate data in order to strengthen the research findings and conclusions.

The tactics used in analysis force researchers to move beyond initial impressions to improve the likelihood of accurate and reliable findings. Exemplary case studies will deliberately sort the data in many different ways to expose or create new insights and will deliberately look for conflicting data to disconfirm the analysis. Researchers use the quantitative data that has been collected to corroborate and support the qualitative data which is most useful for understanding the rationale or theory underlying relationships. When the multiple observations converge, confidence in the findings increases. Conflicting perceptions, on the other hand, cause the researchers to investigate more deeply.

Another technique, the cross-case search for patterns, keeps investigators from reaching premature conclusions by requiring that investigators look at the data in many different ways.

6. **Report Preparation:** The goal of the written report is to portray a complex problem in a way that conveys a vicarious experience to the reader. Researchers pay particular attention to displaying sufficient evidence to gain the confidence of reader that all avenues have been explored, clearly communicating the boundaries of the case, and giving special attention to conflicting propositions.

## IMPLICATIONS

Case study, we all know is defined as an intensive description and analysis of a single individual or (sometimes) group. It has got lot of implications for practice. Broad advantages include the following:

- Good source of ideas about behaviour
- Good opportunity for innovation
- Good method to study rare phenomena
- Good method to challenge theoretical assumptions
- Good alternative or complement to understanding the psychology of focus group

Qualitative research can help us to interpret and better understand the complex reality of a given situation and the implications of quantitative data if it is used in perfect combination with quantitative data.

The qualitative research provides us complex textual descriptions of how people feel and see a given research issue. It is the basic strength of qualitative research. To know and understand the human side of an issue – that is, the often contradictory behaviours, beliefs, opinions, emotions, and relationships of individuals, qualitative research as a case study comes in handy. Qualitative methods are also effective in identifying intangible factors, such as social norms, socioeconomic status, gender roles, ethnicity, and religion, whose role in the research issue may not be readily apparent. Qualitative Case studies are generally strong precisely where quantitative studies are weaker. George and Bennett have identified four advantages of qualitative case studies in comparison to quantitative methods: their potential to achieve high conceptual validity, strong procedure for fostering a new hypotheses, usefulness for closely examining the hypothesized role of causal mechanisms in the context of individual cases, and their capacity for addressing causal complexity.

- **Validity of Concepts:** Conceptual validity refers to the identification and measurement of the indicators that best present the theoretical concepts that a researcher wants to measure. Many of the variables that social scientists are interested in, such as democracy, power, etc., are difficult to measure, so the researcher has to carry out a “contextualized comparison,” which automatically searches for analytically equivalent phenomena even if they are expressed in different terms and contexts. Qualitative case studies provide the researcher with this facility.
- **New Hypotheses Finding:** Qualitative Case studies are very suitable for serving the heuristic purpose of inductively identifying additional variables and new hypotheses. Quantitative studies lack procedures for inductively generating new hypotheses. Moreover, case studies can analyse

## Case Study as a Method of Qualitative Research

qualitatively complex events and take into account numerous variables precisely because they do not require many cases or a limited number of variables.

- **Causal Mechanisms Explored:** Qualitative Case studies are important in examining the very existence of causal mechanisms in individual cases in detail. Within a single case, there are a large number of intervening variables and these case studies inductively observe any unexpected aspect of the operation of any causal mechanism. They can identify what conditions are present in a case that activates the causal mechanism, which quantitative studies cannot do.
- **Complex Causal Relations (Assessment and Modelling):** This advantage of assessing complex relations through questionnaire and to accommodate their causality is present in qualitative theories but this is not an absolute advantage. Qualitative Case studies are able to accommodate complex causal relations, which are finally equal. This advantage is relative rather than absolute. Qualitative Case studies can zero down on the same end result which can be obtained in different ways by producing generalizations that are narrower and more contingent. Notwithstanding this advantage, others who prefer quantitative methods appreciate theories that are more general even if this means that they are vaguer and more prone to counter examples. The use of case studies has some additional advantages as well. First, a case study is important for developing different views of reality, and secondly, case studies can contribute to the professional development of a researcher.

## Reliability, Validity, and Ethicality: Issues in the Case Study as a Qualitative Method

Issues of Reliability and Validity are very important in any research technique or method. When we conduct a research we must be sure that the results are dependable or reliable and must also be valid, which should be supported by data or quantifiable sources. The question of ethicality is also important because the study or research which we conduct must provide ethical results otherwise it will lose its social importance. Reliability and validity are essential elements in any quantitative research project.

- **Reliability:** Refers to the consistency of the results and how sure readers can be of the explicability of the research. That is, similar results would be obtained if the research were conducted again in similar circumstances. Reliability is calculated for the research instruments-most frequently questionnaires and tests. It is important to note that reliability is not the inherent property of the research instrument (questionnaire, language test) but of the data obtained from a particular administration of this instrument.

So, a researcher needs to calculate and report reliability each time an instrument is used. The most frequently reported statistic used for reliability is Cronbach's alpha ( $\alpha$ ). This statistic shows a correlational type analysis and shows the shared variance of the items on an instrument (Questionnaire of test).

- **Validity:** Refers to the overall quality of the project. It reflects whether the research can be reasonably believed and to what extent generalisations can be made. Validity reflects that how sure a researcher is about his instrument which he applied to measure a certain issue. Validity is often described as internal or external. *Internal validity* refers to how sure the researcher is that variables in the study are responsible for the results reported. *External validity* refers to the generalisability

of the results to a wider population. If the results only refer to the current sample, this is referred to as a threat to external validity.

The main *ethical consideration* in case study research is protecting the confidentiality and anonymity of the participants. Stake (2003) highlights the privileged position of the case study researcher when he says: “Qualitative researchers are guests in the private spaces of the world. Their manners should be good and their code of ethics strict”. (p154). He goes on to assert that it is important that researchers go beyond standard ethics requirements and to exercise great caution to minimise risk by, for example maintaining an active dialogue with the research participants, providing feedback, and in particular for the researcher “to listen well for signs of concern” (p154).

## PARADOX AND LIMITATIONS

“A case study exists in a strange, curious methodological limbo, which, he believes, is due to a lack of understanding of this method.”- Gerring. Findings from qualitative data can often be extended to people with characteristics specific social context and can generally be applied on them hence qualitative research differs slightly from scientific research in general. Case studies are widely used but remain underrepresented. It is also said that it is not free from biases and it is hard to generalize from a single case. Flyvbjerg has talked at length about many confusions circling in the field and misconceptions about case studies and called them misunderstandings. He defined these five misunderstandings which affect the credibility and application of this research type.

Flyvbjerg has identified five misunderstandings about case studies that undermine the credibility and application of this research type. These misunderstandings refer primarily to the theory, reliability, and validity.

1. General, theoretical (context-independent) knowledge is more valuable than concrete, practical (context-dependent) knowledge.
2. It is impossible to generalize on the basis of an individual case; therefore, the case study cannot contribute to scientific development.
3. The case study is most useful for generating hypotheses (that is, in the first stage of a total research process), whereas other methods are more suitable for hypotheses testing and theory building.
4. Case studies contain a bias toward verification; that is, a tendency to confirm the researcher’s preconceived notions.
5. It is often difficult to summarize and develop general propositions and theories on the basis of specific case studies.

Quite a few authors have altered their views about case studies as a type of qualitative research type (see, for example, Campbell 1975 and Eysenck 1976 in Flyvbjerg 2006). In consideration about changing his view, Eysenck wrote following: “Sometimes we simply have to keep our eyes open and look carefully at individual cases – not in the hope of proving anything, but rather in the hope of learning.

## ILLUSTRATION

Before deciding the method to study the demonetisation phenomena many methods are discussed, like ethnography, narrative phenomenological and case study. After much thought process, it was decided by the researcher that the case study method is far better than all of them because it takes in to account the interviews, documents, reports and observations everything. The ethnography restricts the researcher to observations and interviews only and to decide the sample size in this method is also difficult. In narrative method the sample size is restricted. The case study method is applicable to this set of users or stake holders because it can be used to examine the issue of whether or not the demonetisation is beneficial in some way to the users and what those benefits are? The researcher can take interviews with the individuals and organisations and also can see the documents related to the phenomena. Here the researcher is trying to apply following six steps to an exemplary study of the multiple participants in the demonetisation of currency in India.

In general, demonetisation of currency has three distinct stake holders, each one a good candidate for case study research. The three groups of users include:

- People around the world who use the currency,
- The organizations and institutions using the currency to provide or get themselves provided the things which money can buy, and
- The issuer of the currency itself that is the RBI or the nation itself

In this case, the researcher is primarily interested in determining whether or not the demonetisation is beneficial in some way to the country. The researcher begins with a review of the literature to determine what prior studies have determined about this issue and uses the literature to define the following Research Questions for the study of the demonetisation. Why is demonetisation done? How and when the government of India decided to demonetise the currency? What are the benefits of the demonetisation to the people (the stakeholders), organisations or institutes, and the nation as a whole?

At the outset of the design phase, it is very important to decide that who will be the organisation or group which will be taken to study the issue. The researcher determines that only one or two of these stakeholders will be studied. The researcher decided those individuals should be from different walks of life and some organisation also to be taken for studying this phenomenon. She decides to include only the non-profit organizations represented by some NGOs and some individuals. The researcher contacts the Board of Directors of the Lupin foundation an NGO, who are open to the idea of this case study. The researcher also gathers data about the qualified individuals and, using this data, determines that an in-depth study of representative individuals from four categories – Government officers, Private employees, Entrepreneurs and Students -- is feasible. The investigator applies additional selection criteria so that urban-based and rural-based persons are represented in the study in order to examine whether demonetisation benefitted urban people or rural people.

In this case, the researcher decides to conduct open-ended interviews with key members of each of these groups using a check-list to guide interviewers during the interview process so that uniformity and consistency can be assured in the data, which could include facts, opinions, and unexpected insights. In this case study, the researcher also employed direct observation as a tool.

## **Data Collection Preparation**

The researcher prepares to collect data by first contacting each focus group to be studied to gain their cooperation, explain the purpose of the study, and assemble key contact information. Since data to be collected and examined includes individual interviews only, the researcher states his intent to request the individual members of each group to answer all the questions freely and truly without any hesitation.

The researcher develops a formal investigator training program to include demonetisation topics so that the investigators get a firsthand experience of the questionnaire in question. The training program also includes practice sessions in conducting open-ended interviews and documenting sources and a detailed explanation of the purpose of the case study.

The researcher selects a fifth category, a group of 31 officer trainees, newly inducted members of state administrative service of MP in the RCVP Noronha Academy of Administration and Management as a pilot case, and the investigators applied the data gathering tools that are questionnaire to the pilot case to determine whether the planned timeline is feasible and whether or not the interview and survey questions are appropriate and effective.

Based on the results of the pilot, the researcher makes adjustments and assigns investigators particular cases which become their area of expertise in the evaluation and analysis of the data.

## **Data Collection in the Field**

First, the Investigators arrange to visit the academy to interview the fifth group as a pilot case and describe them the purpose of this case study initially. Secondly, after the description and briefing about questionnaire part is over investigators request that all members should respond to the written questionnaire which is being given to them. When a questionnaire is prepared it is taken in to account that all the important points which need opinions must be covered. It is very important to brief the questionnaire and its content.

The researcher briefed well the sample i.e. the persons to be interviewed about the questions in the questionnaire.

Questions are like: What is demonetisation? What we mean by its objective? What are the alternatives of demonetisation? What is expected out of demonetisation? Was it bold on the part of the Indian premier? What is your opinion about its outcome?

Thirdly, during the interview Investigators take written notes and record field notes after the interview is completed. The interviews, although open-ended, are structured around the research questions defined at the start of the case study. These include why is demonetisation done? How and when the government of India decided to demonetise the currency? What are the benefits of the demonetisation to the people, organisations or institutes, and the nation as a whole?

The Questionnaire is given in the Appendix at the end of this chapter. The questionnaire is a set of pertinent questions about the case study which is already briefed to the sample. The investigators scribbled field notes, recorded impressions and questions that might assist with the interpretation of the interview data.

The investigators made note of stories told during open-ended interviews and flagged them for potential use in the final report. Data is entered into the database. The researcher mailed written 'questionnaires' to all group members with a requested return date and a stamped return envelope. Once the questionnaires are returned, the researcher entered the data into the database so that it can be used independently

## **Case Study as a Method of Qualitative Research**

as well as integrated when the case study progresses to the point of cross-case examination of data for all four groups.

### **Data Analysis and Evaluation**

- First analysis technique used with filled questionnaires returned by each individual and organization under study is within-case analysis.
- Individual investigators prepare detailed case study write-ups for each stake holder, categorizing interview questions and answers and examining the data for within-group similarities and differences.
- Across-case analysis follows. Investigators examine pairs of cases, categorizing the similarities and differences in each pair.
- Investigators then examine similar pairs for differences and dissimilar pairs for similarities.
- As patterns begin to emerge, certain evidence may stand out as being in conflict with the patterns. This gives an insight to researcher to conclude.

### **Report Preparation**

The outline of the report includes thanking all of the participants, stating the problem, listing the research questions, describing the methods used to conduct the research and any potential flaws in the method used, explaining the data gathering and analysis techniques used, and concluding with the answers to the questions and suggestions for further research. The report conclusion makes assertions and suggestions for further research activity, so that another researcher may apply these techniques to another study and its participants to determine whether similar findings are identifiable in other communities.

Demonetisation <sup>2</sup>or Note-bandi as it was being called in common parlance lately, is a very bold and big step by Indian premier.

The main objective of this move that is demonetisation was to curb the black money, corruption and fake money menace. Many people called this decision a draconian law and wanted the govt to roll back it. The new currency which replaced the old one is of denomination of 500/- and 2000/-. Though the people faced a lot of inconvenience owing to shortage of funds, they did not criticize the govt for the move.

The important issues include why is demonetisation done? How and when the government of India decided to demonetise the currency? What are the benefits of the demonetisation to the people as individuals, organisations or institutes, and the nation as a whole?

### **Scenario**

The sixth largest economy in the world measured by nominal GDP estimates and third largest according to purchasing power parity measures i.e. the Indian economy is considered a newly industrialised nation. It is one of the G-20 nation economies and also a major member of BRICS. The average growth rate is 07% over the last 20 years which is considered to be very good and the country is ready to replace the People's Republic of China.

We all know that we have huge quantity of the *Black Money*<sup>3</sup> in India but it is very hard to reach an accepted figure. Although there are various estimates available about the size of the black economy in India, the World Bank had estimated the size of the black economy to be 23.2% of the GDP in 2007.



Black Money refers to funds earned on the black market. The income and other taxes are not paid on it and it is a part of the proceeds of criminal activity such as bribery, kickbacks and corruption. The total amount of black money deposited in foreign banks by Indians is unknown. Some reports claim a total of US\$ one trillion is held illegally in Switzerland.

Demonetization is necessary whenever there is a change of national currency. The old unit of currency must be retired and replaced with a new currency unit. This is the third-time demonetization is happening in India.

- This is not the first time this has happened in India, at least technically. Earlier, Rs 1,000 and Rs 10,000 banknotes, which were in circulation, were demonetized in January 1946, primarily to curb unaccounted money.
- The higher denomination banknotes in Rs 1,000, Rs 5,000 and Rs 10,000 were reintroduced in the year 1954 and these banknotes (Rs 1,000, Rs 5,000 and Rs 10,000) were again demonetized in January 1978.

In 1976 also the situation was not different either. An ordinance was promulgated to execute this act because there was reason to think that high-denomination notes were facilitating the illegal transfer of money for financing transactions which are harmful to the national economy or which are for illegal purposes.

In spite of a bumper harvest, agricultural prices were ruling much higher than after the poor harvest of 1976- 77. There was a concern over the behaviour of agricultural prices particularly of edible oils. Massive imports of edible oil have failed to bring down prices and the mustard oil price control order had failed miserably to give the consumer his requirements at the specified rate.

Also there was a feeling that a considerable amount of black money had gone to finance hoarding and speculation. Hence the demonetisation of high value notes was decided. So we can say that the last time demonetization was done in India almost 36 years ago was also on the same grounds.

## **Demonetisation: Why?**

All said and done why is demonetisation done in India is a question on every one's mind. The basic reason of demonetisation was that the GOI was not well equipped and finding it helpless to tackle the evils of black money, terror funded with illicit money and Havala operations. Physical paper cash is non-traceable, unaccountable, easy to hide or lose, steal, counterfeit, and spend without a trace. As such, paper cash has allowed all sorts of criminal activity to thrive.

- **Black Money:** Black money stored in the form of Rs 500 and Rs 1000 notes had to be taken out of our system. World Bank estimated it to be 23.7% of GDP in 2007. After 10 years which may have increased many folds is creating havoc in economy. Black money reduces government's tax revenue and all works of government come to halt.
- **Havala:** A traditional system of transferring money used in Arab countries and South Asia, whereby the money is paid to an agent who then instructs an associate in the relevant country or area to pay the final recipient. In this system promissory instruments are not exchanged between the brokers; the transaction takes place entirely on the worth or credit or honour of the person. As

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the system does not depend on the legal enforceability of claims, it can operate even in the absence of a legal environment.

- **Drugs Trafficking:** Drug trafficking is a global illicit trade involving the cultivation, manufacture, distribution and sale of substances which are subject to drug prohibition laws.
- **Counterfeit Currency:** It is also known as Fake Indian Currency Notes (FICN) network. It will be dismantled by the demonetisation measures. Taking out 500 and 1000 rupee notes out of circulation will have a lasting impact on the syndicates producing FICN's. Now the funding of terror networks in Jammu and Kashmir, North-eastern states and Naxalite hit states will stop or lessen.
- **Terrorism:** The unlawful use of violence and intimidation, especially against civilians, in the pursuit of political aims. There is no universal agreement on the definition of terrorism. Various legal systems and government agencies use different definitions. Moreover, governments have been reluctant to formulate an agreed upon and legally binding definition. These difficulties arise from the fact that the term is politically and emotionally charged.
- **Tax Evasion:** Tax evasion is an illegal practice where a person, organization or corporation intentionally avoids paying his true liability of tax. Those caught evading taxes are generally subject to criminal charges and substantial penalties. It is an offence for anyone to wilfully fail to pay taxes. The terms "tax avoidance" and "tax evasion" are often used interchangeably, but they are very different concepts.
- **Slow Development of Country:** With the increase in tax revenue the country will fast move on the growth path and the development will increase manifold. After the demonetisation the increase in tax revenue is expected to be 3-4 times the normal collection and this money will be used for the poor people and governmental schemes.

## Alternatives for Demonetisation

To store black money in the form of high denomination notes is easier. The assumption was that people had stored black money in their homes in the form of cash. And by demonetising INR 500 and INR 1,000 notes, these notes would be rendered useless. Holders of black money in the form of currency would deposit it into banks and post offices, for the fear of generating an audit trail. Things haven't turned out like that. What this essentially means is that those who had black money in the form of cash have managed to get it converted into gold or land.

To what extent this happen remains to be seen. A very big group of the economists and political scientists are of the opinion that there are four things that the government could have done, in place of demonetising high denomination notes if the idea was to curb black economy. This would have hit at the heart of the nexus between politicians and builders which thrives on black money.

1. **Political Parties Should Accept Donations by Cheque Only:** Currently, political parties need to declare a donation only if it is greater than INR 20, 000. In 2014-2015, 55 percent of the donation of the national political parties came from those making donations of INR 20, 000 or lower. Hence, the details of these donors are unknown. If citizens are expected to share their identity with the bank or the post office while depositing their demonetised notes, why should donors of political parties be allowed to hide behind an archaic law, is a question worth asking. This needs to change.
2. **Right to Information (RTI) Net Should be Widened on Political Parties Also:** This is currently not the case. If the political parties are brought under the ambit of RTI, they will have to function

in a much more transparent way in comparison to what they do now. This would mean keeping proper records of where the funds to finance them are coming from.

3. **Goods and Services Tax (GST) Should Be Applied on Real Estate:** If real estate is brought under GST, builders if they want to claim input tax credit must request documentation from all the suppliers and the contractors that they work with. This will hopefully start cleaning up the real estate business as more and more builders will have to operate through legitimate means. Once they stop using cash in dealings with their suppliers, their proclivity to ask for cash from their customers will also go down.
4. **Stamp Duty Rates Must be Brought Down on Real Estate Transactions:** This is one reason why the real estate sector is at the heart of black money. If stamp duties across states are reduced and brought to a realistic level, the tendency of people to under-declare the value of real estate transactions will come down. Hence, the proportion of cash transactions will come down. These four moves would have hit at the heart of the generation of black money. These possible alternatives are not accepted by the present government and hence the whole gamut of demonetisation is under scanner.

## **Demonetisation: How?**

The demonetisation of Indian national rupee (INR) 1000 and INR 500 banknotes was a policy decision at GOI level. This decision was taken from the midnight of 8 November 2016. New banknotes of INR 500 and INR 2000 are introduced in Mahatma Gandhi New series.

The banknotes of INR 100, INR 50, INR 20, INR 10 and INR 5 of Mahatma Gandhi series and INR 02 and INR 01 remained unaffected.

However, in the days following the demonetisation, banks and ATMs across the country faced severe cash shortages with severe detrimental effects on agriculture, transportation and especially those businesses which are predominantly cash oriented.

## **At the Crossroads: Effects of Demonetisation on Economy**

- **On GDP Growth:** India's GDP which grew at 7.6% in FY 2015-16 is likely to slow down by 0.5% to 1.5% as per reports of various agencies. This is due to less availability of cash in cash-intensive sectors like manufacturing and real estate. Indian economy is largely cash driven with more than 90% transactions taking place in cash and digital transactions accounting for just the remaining 10 percent. Banks have also been focusing on the single task of deposit and withdrawals with the result that their core function of issuing loans has been adversely affected.
- **On Tax Compliance:** Tax-to-GDP ratio in India is quite low at 16.6% compared to other economies. It is estimated that since more money, including black money, gets accounted for, this will lead to better tax compliance owing to better targeting of income. The positive impact could be lower tax rates as the tax base widens and more people start paying taxes. The digital push of the government will also result in higher indirect tax revenue for the govt. in the form of service tax.
- **On Agriculture:** In agriculture almost all transactions are in cash and, given the values involved, involve the higher denomination notes. The withdrawal of the old currency notes has put pressure on the mandis; farmers are having problems in selling their produce as both the parties have to agree on the mode of payment, which is not in cash essentially.

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- **On Employment Generation:** Consumer demand has slowed due to slow growth rate and consequently industrial production has declined. Due to this employment generation has been negatively impacted and the note bandi affected it more adversely. Since the manufacturing sector which accounts for the highest employment of skilled and semi-skilled labourers, is witnessing slowdown in production; not only less jobs are being created but lay-offs are also taking place at a higher rate.
- **On Black Money:** Fighting black money in the economy was one of the foremost objectives of this entire exercise and we have to see whether this objective was realised or not. The cash component forms just 6% of the black money in the Indian economy and currency demonetization will target just this 6% black income. If various reports are anything to go by, most of this black income has been converted into white by depositing it in Jan Dhan accounts, depositing in individuals own accounts by breaking into smaller chunks, by exchanging for new currency notes through Havala dealers, by buying last-minute luxury items like jewellery and high priced mobiles, by paying advance wages to employees etc. This is supported by the fact that almost the entire amount of Rs 14.18 lakh crores in Rs 500 and Rs 1000 currency denominations lying with the public has returned in the banks. However there have also been some positive impacts like one time removal of counterfeit or fake currency from the economic system.
- **On Terror Funding and Fake Currency:** This was another stated objective of the currency demonetization drive of the government. While initial reports suggest that terror related activities in Jammu and Kashmir witnessed a noticeable halt in the days following the demonetisation drive, including, stone pelting by misguided youths.
- **On Real Estate (Affordable Housing):** The demonetization decision is expected to have far reaching effects on real estate. Resale transactions in the real estate sector often have a significant cash component as it reduces incidence of capital gains tax. Black money was responsible for sharp appreciation of properties in metros; real estate prices may now see a sharp drop. After demonetisation, the affordable housing segment will get a much-needed boost.
- **On Cashless Transactions:** A cashless society<sup>4</sup> could be defined as one characterised by few notes and coins in circulation issued by a Central bank. Cashless transactions account for only 10% of all transactions on daily basis. Making India a cashless or less cash economy was one of the important objectives of this demonetization drive. The Finance ministry, RBI and NITI Aayog announced a host of incentives to boost cashless transactions.

To increase cashless transactions we must:

- Move all government offices and universities out of cash. The fees and dues could be accepted only through net banking or mobile wallets or bank cheques
- All government purchases must be cashless
- The rapid rollout of cashless infrastructure to rural India. Besides POS terminals, the emphasis could be on more incentives for Smartphone penetration and internet connectivity
- Any purchases above INR 20,000 in cash should be made illegal
- Enacting *benami* transactions bill to impede purchasing property
- A new act for real estate transactions for greater transparency
- The Direct Benefit Transfer for all government subsidies.
- Debit Cards distribution to rural people should be fast

## Result of the Case Study

“Demonetisation in India was a trigger which pushed digitisation in India and tried to speed up the cash less society movement”. This was the basic result which came out of this case study analysis.

While the demonetisation drive was aimed at fighting the menace of black money, corruption and terror funding, it came out that tax dodgers have already spend a major portion of the unaccounted money into real estate, gold and other assets. The government has so far enacted the Undisclosed Foreign Income and Assets (Imposition of Tax) Act to bring back cash stashed abroad, and launched two Income Disclosure Schemes (IDS) before and after Note bandi. After the historic drive to scrap high denomination notes, the government should now crack down on benami or dubious property deals. The Prohibition of Benami Property Transaction Act of 1988 came into effect from November 1, 2016. Now the benami property should be attached and confiscated by the government.

Digitisation is fine as it is needed badly but there is lot more to this complex topic of digitisation which includes security concerns, privacy issues, and regulatory challenges.<sup>5</sup> Experts believe that security may not be as big a concern as is sometimes made out to be. There will be technology or techniques that will evolve – partly because of need, and partly through innovation — and all these problems will disappear. But privacy is the bigger problem even as other problems will disappear. Privacy can be misused. The study also pointed out that Demonetisation of old currency notes surely has had some positive and encouraging impact like reducing the cash flow to terror organisations, dismantling of counterfeit currency infrastructure, better income tax and indirect taxation, boost to digital economy. However, it has come at a huge social and economic cost.

Demonetisation is a one-time event and it cannot have much long term effect. It alone is not sufficient to counter black money and corruption in the country; rather other measures are more crucial like bringing the offshore tax evaders to book whose names figure in the Panama papers, raid on benami properties, making donations to political parties open to public scrutiny and making it mandatory for all donations above INR 2,000 to political parties and religious places to be through digital means only.

## CRITICAL QUESTIONS

1. Why qualitative research?
2. How case study method helps in understanding the very nature of the problem?
3. Which is better, qualitative or quantitative research?
4. Is case study method very tedious and time taking?
5. Is case study method dependable and can be generalised?

## SUGGESTED ANSWERS

**Answer 1:** In most applied social research project where we want to study the emotions, preferences and intangible qualities, qualitative research comes in handy. Qualitative data typically consists of words while quantitative data consists of numbers. Though we can codify qualitative data quantitatively too.

**Answer 2:** The strength of case study method is its ability to provide complex textual descriptions of how people experience a given research issue. It provides information about the “human” side of

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an issue – that is, the often contradictory behaviours, beliefs, opinions, emotions, and relationships of individuals. Hence it helps in understanding the basic problem.

**Answer 3:** It is not easy to say that which is better way to do research a qualitative or quantitative method. Rather it depends on the nature of the problem.

**Answer 4:** No. the case study as a method of qualitative research is not tedious. It of course demands more diligence and patience as it deals with preferences n beliefs, human behaviour and emotions. It is not time taking also because it can be done in the same time period as any other qualitative method of research.

**Answer 5:** Yes. Case study method is very much dependable and it can be generalised for many types of research. The basic methodology doesn't change and we can follow the basic procedure to present any research issue as a case. The Explanatory Case Study tells us about the cause effect relationship. The Intrinsic case study involves exploration of one particular case for its own sake, where there is no expectation that results have implications for other case studies. Whereas Instrumental case study involves using a case study of one case to gain insights into a particular phenomenon, where there is also an explicit expectation that learning can be used to generalise or to develop theory. In this case, there is likely to be a question or a set of predetermined criteria or a theory which is being explored and tested through the case study.

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## **KEY TERMS AND DEFINITIONS**

**Action Research:** It is essentially a research approach. The process of identifying issues relevant to social situation is called “action” whereas the processes of systematically collecting, documenting, and analyzing data is simply “research.” Data can be numbers or text.

**Context:** The physical, psychological, social, and cultural factors of any authentic language in use with reference to a specific time are referred as context.

**Data Collection:** Data collection refers to a systematic information collection process through various methods of data collection.

**Explanatory Case Study:** A case study which is used to explain cause-effect relationships related to an event. It is basically used for comparing a case to other cases, but this type of case study is a long-term case study, and also uses quantitative research methods.

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**Field Notes:** These are detailed notes recorded during or after interviewing research participants. Some researchers or investigators include their personal ideas in their field notes, whereas other investigators use memos while analyzing the interview later.

**Multiple Case Study:** When the researcher uses more than one case to better understand a particular issue we call it a multiple case study. It focuses more on exploring an issue rather than describing one case in detail by comparing and contrasting different cases.

**Open Interviews:** The “open-ended” and “unstructured” interviews which give any participant an open field to answer the question on his own are referred to as open interviews. These interviews get developed normally in due course of time.

**Phenomenon:** A phenomenon is something like an object or something built like an event or feeling. It is normally anything which can be seen or experienced by the human senses.

**Pilot Study:** When a researcher tests and refines his data collection and analysis methods through a study process it is referred to as a pilot study.

## **ENDNOTES**

- <sup>1</sup> A particular instance of something used or analysed in order to illustrate a thesis or principle.
- <sup>2</sup> The act of stripping a unit of currency of its status as legal tender is referred to as demonetisation. Whenever there is a change of national currency it occurs: The current form or forms of money is pulled from circulation and retired, often to be replaced with new notes or coins. Sometimes, a country completely replaces the old currency with new currency.
- <sup>3</sup> Income illegally obtained or not declared for tax purposes.
- <sup>4</sup> A society in which purchases of goods or services are made by credit card or electronic funds transfer mechanism rather than by cash or checks is called a cashless society.
- <sup>5</sup> These were the issues discussed by a group of experts, during a panel discussion ‘Demonetisation and Digitisation: The Road Ahead’ on January 19, 2017. The discussion was organised by Free Press Journal (FPJ) and Indo-American Chamber of Commerce (IACC).

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## **APPENDIX: QUESTIONNAIRE**

1. Name
2. Place of Birth
3. Age
4. Education
5. Occupation
6. What do you mean by Demonetisation?
7. When have you heard first about demonetisation? Did government of India demonetize its currency before too?
8. What was the objective of demonetisation?
9. Do you know the alternatives other than demonetisation for the same task?
10. Do you feel that demonetisation was the best alternative for this purpose?
11. Do you know that methods of curbing black money i.e. demonetisation, has been successful in any other economy?
12. In the first instance, in your opinion what was the impact of demonetisation on Indian economy?
13. As the final date of demonetisation process is approaching i.e. 31<sup>st</sup> March 2017, do you feel that demonetisation effort has attained its purpose?
14. What are broad effects of demonetisation including political effect on Indian economy and have you really envisaged them? Did the Prime minister of India take a very bold step?
15. Finally, is demonetisation a successful attempt in totality?

# Chapter 24

## Fundamentals of Delphi Research Methodology

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### ABSTRACT

*Although the Delphi method was designed as a forecasting tool for the RAND Corporation in the 1950s, in the last several decades, this research methodology is commonly used for facilitating consensus in many fields such as business, education, and nursing. Because of the increased use of the Delphi method, more information is needed for researchers to precisely execute a successful Delphi study. This chapter briefly introduces the Delphi method, reviews the methodology, discusses types and variations in Delphi studies, addresses the advantages and limitations, and provides clear, step-by-step guidelines for employing a Delphi method research study.*

### INTRODUCTION

Delphi research method (Delphi Method) was originally developed for the RAND Corporation in the late 1950's and was primarily intended for military forecasting purposes during the Cold War (Dalkey & Helmer, 1963; Linstone & Turoff, 2002, 2011). However, Delbecq, Van de Ven, and Gustafson (1975) suggested that Delphi methodology could also be used to support judgmental decision-making, which could potentially support fields outside the military. In fact, Delbecq et al. (1975) asserted the Delphi Method could achieve the following objectives:

1. To determine or develop a range of possible program alternatives;

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2. To explore or expose underlying assumptions or information leading to different judgments;
3. To seek out information which may generate a consensus on the part of the respondent group;
4. To correlate informed judgments on a topic spanning a wide range of disciplines, and
5. To educate the respondent group as to the diverse and interrelated aspects of the topic. (p. 11)

Later, Ziglio (1996) pointed out that because of the method's applicability to derive decisions made from expert judgments, multiple fields began using the methodology to support creative decision-making.

In the last six decades, the use of Delphi Method has increased to facilitate group communication and encourage consensus among a panel of experts on a selected topic such as curriculum decisions, strategic planning, and healthcare (Cuhls, 2004; Fischer, 1978; Hsu & Sandford, 2007; Linstone & Turoff, 2011; Twining, 1999). Moreover, Twining (1999) attributed an increase to the method's ability to the use computer-mediated conferencing and asynchronous online survey techniques. In fact, more advanced online survey tools and ready-to-use statistical software have made the Delphi Method much easier to facilitate.

A literature review revealed that nursing and healthcare, business, and education are the primary disciplines that use the Delphi methodology. However, within those disciplines, there are a variety of applications. For example, within education, the Delphi Method has been used for various topics that are best addressed by collective opinion or judgment such as curriculum planning and modifications, treatment planning, policy development, program evaluations, course evaluations, and strategic planning. In addition to healthcare, business, and education, the Delphi Method has also been used in societal policymaking, industry, and psychology (Linstone & Turoff, 2002; Moriarity, 2010). Although original studies were completed to forecast long-range trends (Dalkey & Helmer, 1963; Ziglio, 1996), many different applications of the Delphi methodology have since been developed (Okoli & Pawlowski, 2004; Ziglio, 1996). For example, Linstone and Turoff (2002) reported the following potential uses for the Delphi research method:

- Gathering current and historical data not accurately known or available
- Examining the significance of historical events
- Evaluating possible budget allocations
- Exploring urban and regional planning options
- Planning university campus and curriculum development
- Putting together the structure of a model
- Delineating the pros and cons associated with potential policy options
- Developing causal relationships in complex economic or social phenomena
- Distinguishing and clarifying real and perceived human motivations
- Exposing priorities of personal values, social goals. (p. 4)

In addition, Franklin and Hart (2007) suggested the following as best reasons for using the Delphi Method: researching an institutional or environmental phenomenon without previous history; a quickly changing event that outdates the literature; or a very complex phenomenon that truly requires experts for understanding.

Because of the increased use and application of the Delphi Method, more information is needed for researchers to understand how to best utilize the method and precisely complete a Delphi study. This chapter explores the Delphi Method's methodology including advantages and limitations, discusses

the types and variations in Delphi studies, and provides clear step-by-step guidelines for employing a Delphi research study.

## **BACKGROUND**

Developed during the Cold War for military purposes, the Delphi Method was established to forecast technological impact during warfare for the RAND Corporation, whose research focused on national security topics (Dalkey & Helmer, 1963). For the next decade, RAND continued using the Delphi Method to assist the US Air Force with long-range policymaking (Dalkey, 1969). It is interesting to note, the name *Delphi* was derived from the Greek Oracle of Delphi to indicate the predictive nature of the methodology as the Oracle was the mythological seer of the future (Ziglio, 1996). According to Greek legend, the Delphi Oracle was the advisor to the god Apollo for making important decisions such as going to war (Marchais-Roubelat & Roubelat, 2011). However, in spite of the obvious connection to Greek history, the researchers credited with developing the methodology, Norman Dalkey and Olaf Helmer, were not involved in the naming process and were never pleased with the god-like and prophet type of the name (Ziglio, 1996). They believed the name did not support the formal and rigorous research process that was needed to describe a rigorous Delphi study. It was actually named by a UCLA philosophy professor, who worked with RAND at the time (Cuhls, 2004).

Aside from the original RAND research literature, Linstone and Turoff (2002) and Ziglio (1996) are credited with developing the foundational literature on Delphi Method. Other research techniques exist for structured group communication such as Nominal Group Technique (NGT); however, Nominal Group Technique usually takes place in one face-to-face meeting (Vernon, 2009), which is not easy if expert panel members are geographically located throughout various areas of the globe; in addition, groupthink or a group member may pressure and create influence.

## **DELPHI METHOD RESEARCH**

Linstone and Turoff (2002) formally defined Delphi Method “as a method for structuring a group communication process so that the process is effective in allowing a group of individuals, as a whole, to deal with a complex problem” (p. 3). Ziglio (1996) further expanded the original description as a “structured process for collecting and distilling knowledge from a group of experts by means of a series of questionnaires interspersed with controlled opinion feedback” (p. 3). Later, Day and Bobeva (2005) put forth that the Delphi Method involves “the use of techniques that aim to develop, from a group of informants, an agreed view or shared interpretation of an emerging topic area or subject for which there is contradiction or indeed controversy” (p. 103). Moreover, Delphi researchers believe human opinion or judgment is legitimate; a carefully selected expert panel can provide a valid judgment (Streveler, Olds, Miller, & Nelson, 2003). In other words, the methodology creates a structured flow of information involving a systematic series of surveys and reciprocal feedback to survey participants, the panel of experts, after each survey round to determine group consensus on a particular topic. Others have stated that the ultimate goal is an informed decision or consensus; however, consensus is typically needed for a single dimension question (Garson, 2014). Because of this, Linstone and Turoff (2011) declared that the

final goal for Delphi is not really consensus, but structured group communication; they recommended that the survey rounds should end when responses become stable.

Delphi methodology has been categorized as quantitative research (Garson, 2014) and as mixed methods research, utilizing both quantitative and qualitative methodologies (Hall, 2009). However, Creswell (2014) defined mixed methods research as an approach to research that combines statistical trends with personal stories and experiences, which would not typically apply to the traditional Delphi Method. On the other hand, Franklin and Hart (2007) considered Delphi Method to be a hybrid of both quantitative and qualitative research because both statistical and qualitative data are collected. Stewart (2001) pointed out that quantitative and qualitative usually refer to the underlying research theories and not what kind of data is collected. Because so many have modified this method, Delphi Method can be all three types depending on the type of research being done, and the data collection and analysis process needed to solve the research question(s).

The Delphi Method is a powerful tool for group communication (Brown, Cochran, & Dalkey, 1969) that allows participants to deliberate and reflect upon the problem, which may result in the participants submitting more thoughtful and thorough responses than traditional group communication methods (Barnette, Danielson, & Algozzine, 1978; Pollard & Pollard, 2008). In addition, expert panel members generate their opinions and are provided an opportunity to think about other members' judgments on the topic without being influenced by groupthink (Barnette et al., 1978; Clayton, 1997). While considered suspect by some (Sackman, 1975), many researchers have employed the Delphi Method to gain consensus because its ability to avoid direct confrontation and debate while using an informed panel of experts (Brown et al., 1969). In fact, the following Delphi Method characteristics firmly support its use as a group decision-making tool:

- Participants generate ideas silently and individually, which produces a greater quantity of ideas;
- Because participants create their responses on their own time schedule, they are more likely to critically think through the problem, therefore, increasing the value of their response;
- Participants are anonymous and isolated, which encourages freer responses without pressure from other group members' opinions and ideas;
- Participants suggestions are aggregated equally;
- Participants usually experience a sense of closure and accomplishment in the decision-making process. (Delbecq et al., 1975)

Because the Delphi Method is considered a methodology for data collection and research, the literature provides guidelines for when it is best utilized. For example, Ziglio (1996) indicated that in the absence of related literature, use of expert opinion to develop a consensus is an appropriate use for research. Additionally, Okoli and Pawlowski (2004) suggested a Delphi Method research design is appropriate when there is conflicting information to be decided (Dalkey & Helmer, 1963; Linstone & Turoff, 2002). However, Linstone and Turoff (2002) summarily established the following for when a Delphi study could be best suited:

- The problem does not lend itself to precise analytical techniques but can benefit from subjective judgments on a collective basis;

## ***Fundamentals of Delphi Research Methodology***

- Individuals needed to contribute to the examination of a broad or complex problem, have no history of adequate communication, and may represent diverse backgrounds with respect to experience or expertise;
- More individuals are needed than can effectively interact in a face-to-face exchange;
- Time and cost make frequent group meetings infeasible;
- The efficiency of face-to-face meetings can be increased by a supplemental group communication process;
- Disagreements among individuals are so severe or politically unpalatable that the communication process must be refereed and/or anonymity assured;
- The heterogeneity of the participants must be preserved to assure validity of the results, i.e., avoidance of domination by quantity or by strength of personality (bandwagon effect). (p. 4)

## **Research Methodology**

While the Delphi Method is not always easily categorized into a quantitative or qualitative research method, it is still a valid research method and should be treated as such. Therefore, assumptions, and sampling methods and frames must still be identified. In addition, the expert panel criteria, selection, and size should be clearly determined along with clear guidelines for consensus, stability of responses, and stopping policy determined.

### **Assumptions**

According to Garson (2014), the following assumptions are made in Delphi research: the experts are truly knowledge experts in their field before the time of panel selection; the experts will be motivated to participate because the topic of research will be within their field of expertise; there could be a bias toward the mean when the statistics are presented back to the panel; the researcher will remain neutral throughout the research process; and Delphi is best used when the topic needing consensus can be determined by the experts in that field. Hsu and Sanford (2007) further noted there is an assumption that expert panel members are equal, which may not always be true. They cited Altschuld and Thomas (1991), who pointed out that some expert panel members may have more in-depth domain knowledge than others, which could lead to more general statements on the topic examined.

### **Sampling Frame and Sample**

Creswell (2011) described a sampling frame as “a group of individuals (or a group of organizations) with some common defining characteristic that the researcher can identify and study” (p. 142). In a Delphi study, the sampling frame or study population will consist of identified potential members of an expert panel. Delphi studies typically utilize non-random samples (Garson, 2009) because of the need for expert identification; in fact, the literature consistently supports the use of selected panelists for a Delphi sample (Ludwid, 1997; Twining, 1999). Therefore, coverage error does not apply. However, non-response rate can be a problem for Delphi studies as there is usually a large time commitment involved and panelists may drop out before the study is completed.

Snowball sampling, a procedure asking identified participants for suggestions for other qualified potential panel members, is also often utilized to locate additional participants for the expert panel (Cre-

swell, 2011). Hence, Skulmoski, Hartman, and Krahn (2007) identified the use of snowball sampling as an appropriate method of identifying experts for a Delphi study. This technique may be applicable due to the nature of the specific knowledge base required for this type of inquiry. Validity of a Delphi study may decrease if participants are selected through preference of the researcher (Ziglio, 1996); therefore, the expert panel may also be identified through consultation with external organizations involved in the study topic as well as a thorough review of relevant literature.

## Expert Panel Criteria

According to Hsu and Sandford (2007), no specific guidelines were found in the literature regarding the selection of Delphi expert panelists. In fact, Keeney, Hasson, and McKenna (2006) suggested that often, the decision for selection is based upon funding, logistics, and rigorous inclusion and exclusion criteria. However, the outcome of a Delphi study is based upon expert opinion; therefore, the results of the study are considered only as strong as the expertise of the panel members (Hsu & Sandford, 2007; Linstone & Turoff, 2002; Martino, 1978; Murry & Hamons, 1995; Powell, 2003; Rowe & Wright, 2001; Yousuf, 2007). Because of this, the researcher should carefully develop a set of criteria for expert identification and panel membership, which is a cornerstone of an effective Delphi study (Stitt-Ghodes & Crews, 2004).

In addition to qualifications identified by the research study, Delbecq et al. (1975) suggested that prospective members should meet the following requirements to be considered for membership of an expert panel to be able to contribute effectively:

1. Feel personally involved in the problem of concern to the decision makers;
2. Have pertinent information to share;
3. Are motivated to include the Delphi task in their schedule of competing tasks; and
4. Feel that the aggregation of judgments of a respondent panel will include information, which they too value, and to which they would not otherwise have access. (pp. 87-88)

Further, from his examination of the literature, Miller (2006) recommended:

*Experts should be well-known, knowledgeable, informed, and professionally respected. Acceptable criteria include: a) national or international reputation, b) familiarity with the topic, c) has conducted research, written, or lectured on the topic, and d) is considered to have a deep interest in the problem and has experiences to share. The Delphi technique should not be used with groups that have difficulty in reading or expressing himself or herself in written communication. Participants must be highly motivated and committed. (p. 1)*

## Expert Panel Selection

It is important to note that Delbecq et al. (1975) and Boulkedid, Abdoul, Loustau, Sibony, and Alberti (2011) indicated a heterogeneous group might produce larger proportions of quality judgments than a homogenous group due to varied experiences and personalities. Similarly, Stitt-Gohdes and Crews (2004) also advocated avoiding homogeneity within the study panel. In developing criteria for the Delphi panel, Garson (2014) suggested the members of the panel “should represent the research purpose in a way that legitimates the outcome of the Delphi process” (p. 130). Ziglio (1996) further asserted that panelists

should have “knowledge and experience with the issues under investigation; capacity and willingness to participate; sufficient time to participate; and effective written communication skills” (p. 14). Whatever criteria is established, Flanagan, Ashmore, Banks, and MacInnes (2016) remind us that the “person or persons need to be recognised as such [experts], both within their peer or professional group and to a wider audience if the outcomes are to be deemed credible” (p. 88). Because experts with applicable domain knowledge are needed (Rowe & Wright, 2001), a gatekeeper may be used to identify potential panel members (a gatekeeper could be an organization that would recognize experts in that field). In fact, Hasson, Keeney and McKenna (2000) believed that using a gatekeeper to help with panel selection may increase access to the participants and increase validity and authenticity of the study.

### **Expert Panel Size**

The literature did not provide a specific formula to determine the number of participants needed in an expert panel (Keeney et al., 2006). However, differing perspectives for total size of the panel were identified throughout the literature (Brooks, 1979; Delbecq et al., 1975; Powell, 2003; Ziglio, 1996). Although many researchers have justified the use of very small expert panels, Ludwid (1997) and Miller (2006) both reported the majority of Delphi studies examined used between 15-20 panel members; however, Brown et al. (1969) prescribed that a seven member panel is the minimum, but believed that outcome accuracy slowly increases with larger numbers. Ziglio (1996) added that the size of the panel may vary considerably and also by the type of Delphi study implemented. Others believed that a group of homogeneous experts may be small and consist of 10-15 members (Stitt-Gohdes & Crews, 2004; Ziglio, 1996) and groups of more diverse expertise may be larger (Taylor-Powell, 2002). In fact, Garson (2014) suggested four factors should affect the optimal size:

1. **Homogeneity:** If the panel is homogeneous, then the panel may be smaller than that of a panel needing diversity.
2. **Triangulation:** If the study uses multiple methods such as Delphi, surveys, and focus groups, then a smaller panel size would be acceptable.
3. **Precision:** If precise conclusions are desired, the panel should not be too small or too large.
4. **Study Type:** Confirmatory studies may require a larger panel and exploratory studies could use a smaller panel.

Yet, according to Okoli and Pawlowski (2004), the size of a Delphi panel should support the group dynamic and believed that 10-18 experts should be the average number for a Delphi panel. Although some suggest the larger the expert group, the more effective the study because of attrition, Powell (2003) noted a lack of evidence of effect on validity or reliability in development of consensus related to the number of participant numbers. However, Delbecq et al. (1975) commented that when different reference groups are used, such as teachers versus administrators are selected, then the size of the group may need to be increased. It is also important to remember that expert panel members may drop out of the process so additional members could be added in the beginning to protect against the panel becoming too small before the study is completed.



## Consensus

Consensus using the Delphi technique is considered a convergence of opinion rather than full agreement (Hsu & Sandford, 2007). Perhaps the greatest criticism of the Delphi Method has revolved around the lack of clarity around the definition of consensus (Diamond et al., 2014; Robson & McCarten, 2016). After a systematic review of 100 Delphi studies, Diamond et al. (2014) found definitions of consensus varied widely and were poorly reported when considering the quality criteria of: reproducible participant selection criteria, stated number of rounds, clear criteria for dropping items, and specified stopping criteria. Similarly, James and Warren-Forward (2015) recommended studies designed for consensus building should incorporate clear consensus statements and guidelines. Furthermore, von der Gracht (2012) recommended improvements to consensus measures, stability measures, and stopping policies to improve the quality of Delphi research.

## Consensus Guidelines

In terms of consensus guidelines, in addition to the statistics used to define consensus, the conditions under which items should be rejected need also to be defined (Vernon, 2009). Vernon suggested a “monotonic change toward rejection... with there being no value in seeking a further response for that particular question/issue in the presence of a definite and unchanging trend towards rejection” (2009, p. 72). Following this further, Diamond et al. (2014) recommended, “Clear criteria for dropping or combining items should also be specified based on the level of agreement or disagreement with individual items” (p. 405). However, only 60% of the studies reviewed clearly reported the identification of such dropping criteria (Diamond et al., 2014).

## Stability of Responses

Additionally, stability of responses plays a role in how the Delphi method is carried out. Stability is the researcher “monitoring the permanence of respondent’s vote” (Day & Bobeva, 2005, p. 106) and is achieved when there is no significant difference of response between rounds (von der Gracht, 2012). In fact, some researchers indicate consensus depends upon stable results so should be assessed only after determining stability (Di Zio, Rosas, & Lamelza, 2017). In particular, Linstone and Turoff (2002) found stability analysis of the group to be an effective measure of the state of equilibrium, whereby the amount of change between rounds of the summarized group response is measured. Specifically, they deemed changes of less than 15% change between distribution of response between rounds to have reached stability. Interestingly, in an exploration of improving methodological rigor in Delphi studies, Diamond et al. (2014) found only one in a random sample of 100 Delphi studies included stability of response as a stopping criterion.

## Stopping Policy

Another methodological factor is the stopping policy for the Delphi study, which is the criteria to determine the endpoint of the study (Grime & Wright, 2016; Linstone & Turoff, 2002; von der Gracht, 2012). While, there is no agreement in the literature as to exact number of rounds required in a Delphi study (Mullen, 2003), when iterative feedback is considered, a minimum of two rounds is necessary

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to incorporate feedback of items proposed by panelists (Garson, 2014). In as much, Diamond et al. (2014) found the majority of studies concluded in two to three rounds, which is also consistent with other research (Grime & Wright, 2016). While often Delphi studies run for a pre-determined number of rounds (Diamond et al., 2014), others suggest the number of rounds cannot be prescribed when achieving consensus is the purpose of the study (Garson, 2014; Hsu & Sandford, 2007). However, as panel fatigue can develop in longer studies, a balance between number of rounds and panel attrition merits consideration when the panel is at risk of dropping below a critical level (Day & Bobeva, 2005; Powell, 2003). Importantly, the criteria for concluding the study need to be clearly documented and may include a combination of factors including desired level of consensus, stability of responses, and panel attrition (Diamond et al., 2014; Grime & Wright, 2016).

## **DELPHI RESEARCH PROCESS**

The Delphi Method is an iterative process in which group agreement is often gained, requiring several rounds or phases in which data are collected in an attempt to answer the proposed research questions. Linstone and Turoff (2002) described a typical Delphi study as having four distinct phases:

*The first phase is characterized by exploration of the subject under discussion wherein each individual contributes additional information he feels is pertinent to the issues. The second phase involves the process of reaching an understanding of how the group views the issue (i.e., where the members agree or disagree and what they mean by relative terms such as importance, desirability, or feasibility). If there is significant disagreement, then that disagreement is explored in the third phase to bring out the underlying reasons for the difference and possibly to evaluate them. The last phase, a final evaluation, occurs when all previously gathered information has been initially analyzed and the evaluations have been fed back for consideration (pp. 5-6).*

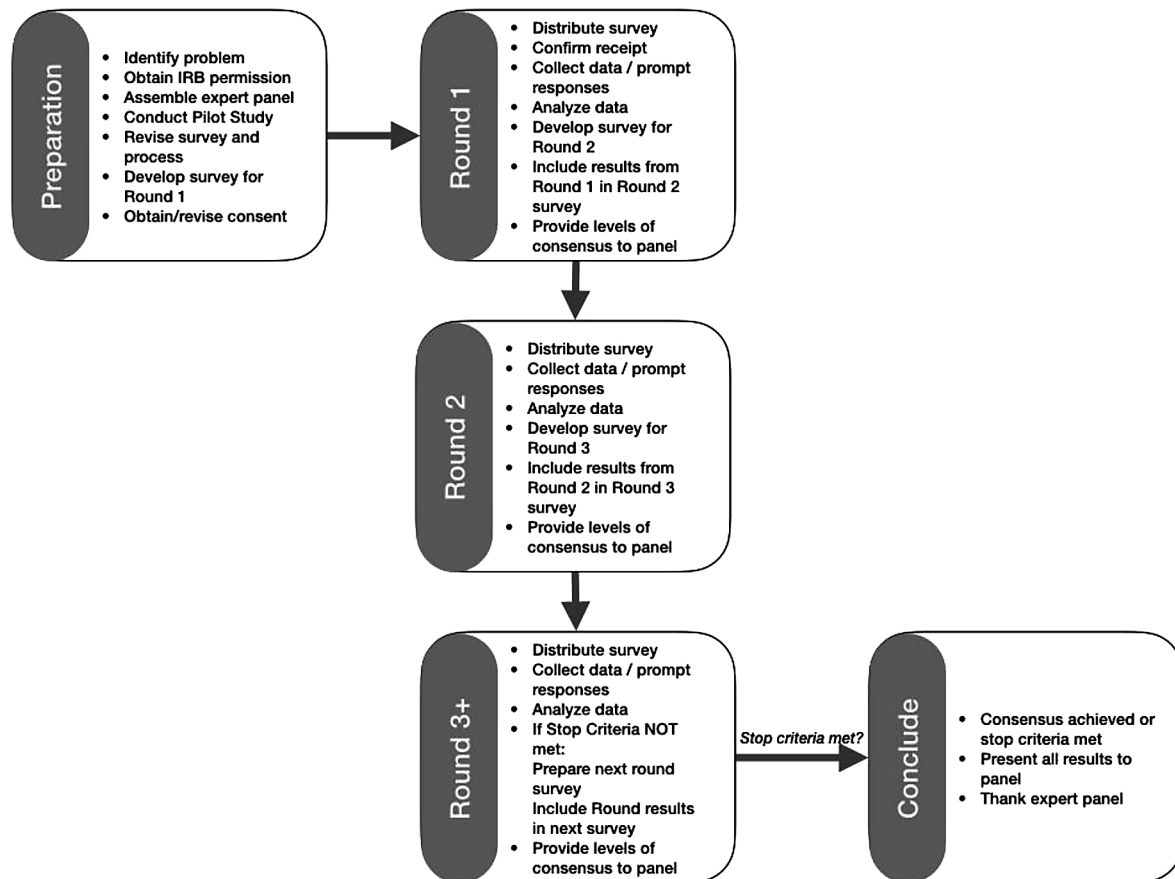
According to Linstone and Turoff (2002) and Miller (2006), three rounds of surveys are typically enough, but that number may vary by the specific needs of the study (Delbecq et al., 1975; Pfeiffer, 1968; Rowe & Wright, 2001; Ziglio, 1996).

Although steps of a Delphi may vary by study, the following basic steps for a three round Delphi Method of research were adapted from Beech (1999). We suggest a process for acquiring permissions, a pilot study, and a plan for ongoing communication also be included.

1. Criteria for expert panel is determined.
2. Selection of the expert panel is made.
3. The first survey round is developed.
4. A pilot study is conducted for content and face validity.
5. The first survey is modified based on pilot study and distributed.
6. The expert panel completes the survey.
7. The first survey round data are collated and analyzed (dependent upon method of consensus) and the second round survey is constructed from the results of the first survey.
8. The second survey is distributed to expert panel.
9. The expert panel completes the second survey.

10. The second survey round data are collated and analyzed and the third round survey is developed.
11. The third survey is distributed to expert panel.
12. The expert panel completes the third survey.
13. The third survey round data are collated and analyzed.
14. The study findings are provided to expert panel.

*Figure 1. Typical steps or rounds for a generalized Delphi study*



It is important to remember that, according to Delbecq et al. (1975), the Delphi process of iterative rounds is complete when consensus, response stabilization, or saturation of information has been reached by the expert panel.

## **Instrumentation**

Many traditional Delphi studies use an open-ended questionnaire or survey instrument for collecting data in the initial phase (Hasson et al., 2000; Keeney et al., 2006); however, a predetermined set of data (found in the literature) may be initially provided for review while panelists are also invited to provide additional input (a combination of open-ended and closed questions was used for the first round of

questioning). According to Mitchell (1991), the use of open-ended questions in the Delphi Method “allows panelists to utilize the intellectual apparatus that makes them experts and may reduce any feeling of underutilization” (p. 344). This may increase panel member commitment to the research study because they are able to see their responses as part of the subsequent questionnaires. However, according to Rowe and Wright (2001), panelists may only respond to the topic with confidence depending upon their extent of knowledge.

The survey instrument typically utilizes an interval scale as recommended by Linstone and Turoff (2002); for example, a five-point Likert scale could be used with a range of 1 = Definitely Not Important, 2 = Not Important, 3 = Slightly Important, 4 = Important, 5 = Definitely Important. A Likert scale allows for statistical analysis to determine if consensus is met using a predetermined level. The Likert scales will vary from study to study; however, four, five, six, seven and nine points have been the most consistently used.

Survey instruments for each iterative round should be carefully designed to encourage members of the expert panel to provide valid responses. For example, the research should provide specific questions without any extra information that may be confusing (Rowe & Wright, 2001); in addition, emotive terms should not be used because how a question is worded may confuse a panelist. Questions should be carefully framed in a manner that does not encourage the panelist to answer one over another option.

## **Validity**

According to Stone Fish and Busby (2005), conventional methods of establishing validity and reliability do not apply to the Delphi Method nor are they obtained for a Delphi study without difficulty. On the other hand, an estimation of validity may be established in Delphi studies through analyzing the consensus rates of the expert panel (Stone Fish & Busby, 2005). However, Helmer (1967) found the Delphi Method both valid and reliable. Later, Helmer (1983) described the technique as effective in decision-making situations within groups, as having application in reliability and additionally as having advantages over other group consensus methods. Conversely, Helmer (1983) also pointed out that although there is difficulty in validating long-term forecasts created with the Delphi technique, there is evidence of the Delphi producing forecasts that are reliable in nature.

Validity for a Delphi study may be considered in three additional areas. First, validity of the study is enhanced by using a detailed and specific process to ensure panel members have related expertise in the area (Delbecq et al., 1975; Stone Fish & Busby, 2005). Second, validity is considered by obtaining specific feedback from the expert panel, for individual and group responses, rather than simply relying on expert opinion through the use of a general survey (Dalkey, 1967; Stitt-Gohdes & Crew, 2004). By seeking to obtain more accurate responses from group members over a single survey, results are analyzed on an iterative basis for clarity and accuracy of content. Finally, the process of defining group communication becomes critical to the strength of the study (Dalkey, 1967; Stitt-Gohdes & Crews, 2004; Stone Fish & Busby, 2005).

By structuring the survey questions to define the area of inquiry and further reviewing through the use of a pilot study, content validity for the study may also be improved (Stone Fish & Busby, 2005). For face and content validity of the round one instrument, the instrument should be pilot tested to discern understanding and readability before being released to the panel of experts. Because Delphi studies collect experts' opinions anonymously, with several rounds of consideration along with continuous feedback and consensus has formed, this is considered to be a relevant and valid measure as it is the accumulated

opinions of experts (Baker, Lovell, & Harris, 2006; Fushfeld & Foster, 1971; Winzenried, 1997). In fact, Mitroff and Turoff (2002) maintained, “the validity of the resulting judgment of the entire group is typically measured in terms of explicit ‘degree of consensus’ among the experts” (p. 22). The more the experts agree, the stronger the validity of the results.

## **Provisions of Trustworthiness**

In any research study, appropriate methodology methods should be employed in order to obtain accurate results (Creswell, 2011). For increased rigor, researchers must “ensure that procedures have been adhered to and confounding factors eliminated [where possible] to produce dependable results” (Hasson & Keeney, 2011, p. 1695). In addition, the research must clearly document and discuss all steps of the process (Boulkedid et al., 2011). However, rigor also includes required procedures and measures to increase trustworthiness. Provisions of trustworthiness may include an epoché, a methods journal, and pilot survey testing.

### **Epoché**

In a Delphi study, several procedures can support the trustworthiness of the research method. First, as the data collector and facilitator of the data collection process, the researcher can employ bracketing or include an epoché for the suspension of personal experiences, to view submitted responses from the expert panel from an open or fresh point of view (Creswell, 2007). While the Delphi Method is often considered a mixed-method approach (Brady, 2015), there is not a clear consensus as to whether researchers should include an epoché, commonly found in qualitative research as a means of declaring any potential bias and the effect on the study (Creswell, 2013). However, the use of an epoché identifies potential bias that could be introduced into the study, describes this bias, and commits the researcher to bracket out their own views in order to adhere to strict systematic procedures through the research process (Creswell, 2013).

### **Journal**

As suggested by several educational research authors, (Creswell, 2007; Skulmoski et al., 2007) the researcher may want to regularly use a journal to capture personal thoughts and perceptions to maintain objectivity and to increase reliability of the study. Because the researcher is responsible for what is returned for each subsequent survey, it is very important to remain objective and without bias since the researcher could potentially control the study by what feedback is provided to the panel (Turoff & Linstone, 2002). In addition, although a common practice, feedback provided to the panel after each round that reveals mean and median scores showing movement toward or away from consensus may influence a panel member’s decision making (Grime & Wright, 2016). Finally, the researcher may want to have the statistics externally verified for each round before providing the results back to the expert panel.

### **Pilot Study Procedures**

A part of structuring group communications and further establishing content validity for the study is the development of a pilot study for the first round survey (Creswell, 2011) to test out the process as

well as improve the instrument (Clibbens, Walters, & Baird, 2012; Skulmoski et al., 2007). In addition, Skulmoski et al. (2007) suggested that a Delphi pilot study may also be helpful to increase comprehension of the questions by the participants and to remove procedural issues prior to sending the survey to the expert panel. The first round survey instrument should be pilot-tested with a relevant group of participants but not usually the panel of experts. Feedback collected from the pilot survey participants may reveal weaknesses in the instrument and suggest necessary changes such as clarity of instructions, visual design, and question validity to improve the survey before the first round delivery to the study panel of experts.

### **Data Collection**

Research procedures in a Delphi study include multiple iterations of surveys, including opportunities for panelists to confirm or change their responses based upon the group outcomes of the questionnaires. Data collected through the questionnaires are tabulated and evaluated in order to determine areas of consensus by the expert panel, to create additional clarification questions for the panel, and also to determine additional questions for subsequent surveys in the Delphi. In addition to the statistical data, qualitative data is also collected. The collection process must offer a way to export the qualitative data so that coding and analysis can occur. The entire data collection process can now be completed using the Internet and a web-based survey tool that provides the following advantages: cost, time, and geographical separation; the process allows participants time to think through their ideas; time to digest the group's ideas; and anonymity of the respondents allows opinion expression (Rotondi & Gustafson, 1996).

### **Data Analysis and Consensus**

Traditionally, in Delphi methodology, responses from initial round surveys are analyzed using qualitative measures and member confirmation of the analysis provides validity for initial results (Stitt-Gohdes & Crews, 2004) because the initial round typically offers open-ended questions. During the second and subsequent rounds, participants are usually asked to provide ratings and/or rankings of the initial findings. This is often done through Likert-type scales (Beech, 1999; Stitt-Gohdes & Crews, 2004) and analysis of measures of central tendency, such as means, medians, and standard deviations (Beech, 1999; Stitt-Gohdes & Crews, 2004; Stone Fish & Busby, 2005). Descriptive statistics are often used to determine what items that are being reviewed for consensus are kept for the subsequent rounds.

Early on, Fischer (1978) remarked that “the failure of the Delphi method to incorporate such elements as standard statistical tests, accepted sampling procedures, and replication leaves the method suspect as a reliable scientific method of prediction” (p. 68). Many Delphi studies choose a level of consensus to be when 60-80% of panelists agree with a survey item (Green, 1982; Miller, 2006; Rath & Stoyanoff, 1983) with a level of 70-75% being the most commonly chosen (Diamond et al., 2014; Vernon, 2009) with Keeney et al. (2006) recommending a level of 75%. However, von der Gracht (2012) pointed out that consensus levels are important, but not without group stability—a point where panelist' responses are consistent in successive survey rounds.

According to the literature, statistical values used to determine consensus will vary from study to study (Hsu & Sandford, 2007). Mean and median scores along with standard deviation and mode analysis may be used in Delphi studies to determine consensus as well as percentage of responses (Hasson et al., 2000; Hsu & Sandford, 2007; Powell, 2003). In fact, Holey, Feeley, Dixon, and Whittaker (2007) found

that the combination of mean and standard deviation along with range and medians could be used to show consensus with a move toward central tendency. Although there is not a standardized method for measuring significance for consensus within the Delphi Method (Holey et al., 2007; Hsu & Sandford, 2007; Powell, 2003; Vernon, 2009), measures of central tendency, standard deviations, percentage of panel agreement, and interquartile ranges (the middle 50% of the responses) are most often used to ascertain panel consensus (Stone Fish & Busby, 2005). However, an increase in Kappa values may also support consensus but not as a single measure (Holey et al., 2007).

More recently, Kalaian & Kasim (2012) suggested a variety of parametric and non-parametric statistical methods could be used to determine panel consensus. If the expert panel has 30 or more members, one of the following parametric four statistical methods may be used:

1. Coefficient of Variation (CV) difference for an item from two consecutive rounds;
2. F-ratio for comparing the variances of an item from two consecutive rounds;
3. Pearson correlation coefficient for the experts' responses on an item from two consecutive rounds;
4. Paired t-test for experts' responses on an item from two consecutive rounds.

If the expert panel has less than 30 members and/or the distribution of the responses for each of the items are skewed (non-normal distribution), Kalaian and Kasim (2012) recommend one of the following nonparametric statistical methods may be used:

1. McNemar Change Test of the responses of the experts on dichotomous items from two consecutive rounds;
2. Spearman's Rank Correlation Coefficient between the ratings of the experts on an item from two consecutive rounds;
3. Wilcoxon Paired Signed-Ranks T Test.

## **DELPHI METHOD VARIATIONS**

Currently, a variety of Delphi studies have been used to obtain knowledge judgment in order to ascertain information regarding uncertain topics, construct new theories, develop policy, identify opposing viewpoints, and to develop normative sets of priorities (Yousuf, 2007). In general, three overarching versions of the methodology have developed over time. First, the Policy Delphi seeks to uncover arguments, both pro and con, for issues of policy (Linstone & Turoff, 2002). This type of Delphi does not result in a consensus but points out arguments for opposing positions and measures opinions. Second, the Trend Model asks participants to reflect on a specific trend and develop forecasts for the future based upon group-decided assumptions. The group assumptions are voted on by the expert panel and then reviewed in developing the forecasts (Ziglio, 1996). Third, the Structural Model or Consensus Delphi (Geoffrion, 1987; Lendaris, 1980) invites the expert panel to render individual opinions, in order to develop a group system or model. This type of Delphi is described by Helmer (1977) as a communication method supporting the development of group judgments and found by Rieger (1986) to be the majority type of Delphi studies conducted within the field of educational research.

Delphi Methods are often modified in order to provide a better solution to the research question being answered. For example, a Delphi study that presents a list of items for ranking during the first round

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is usually considered a modified Delphi study since traditionally, the first round is used for free form responses. There are many modifications that can occur but those should be used in order to solve the research question.

In addition to the primary overarching methods are two advanced versions of the Delphi Method: the Fuzzy Delphi (Ishikawa et al., 1993) and the Real Time Delphi (Gordon & Pease, 2006). The Fuzzy Delphi combines traditional Delphi Method with Fuzzy Set Theory in order to address some of the ambiguity of the Delphi panel consensus or the “fuzziness” of consensus. The Fuzzy Delphi is a more advanced version of the Delphi Method in that it utilizes triangulation statistics to determine the distance between the levels of consensus within the expert panel. This Delphi Method is most often used in fields such as engineering and mathematics although business has used it for strategic planning and forecasting.

Developed by Gordon and Pease (2006), the Real Time Delphi is an advanced form of Delphi Method that uses computers and real time surveys that allow panelists to answer simultaneously and immediately see the result of the group’s response to produce rapid response. In fact, it allows the panelists to change their mind throughout the process and is not necessarily divided into rounds (Gordon & Pease, 2006).

According to Gordon & Pease (2006, p. 323), panelists are provided the following information for each response:

1. The average (or median) response of the group so far (and possibly the distribution of responses).
2. The number of responses made so far.
3. A button that opens a window showing reasons that others have given for their responses.
4. A button that opens a window that allows the respondent to type in justifications for their own answer.
5. A space for the new respondent’s numerical estimate, answering the question.

Having access to this kind of in-depth information produces a more informed judgment by the panelist. The primary difference between a classical Delphi and Real Time Delphi is the ability to give immediate feedback to participants thus avoiding delays and dropouts (Gnatzy, Warth, von der Gracht, & Darkow, 2011). The Real Time Delphi also takes much less time than a traditional Delphi study, which could reduce the amount of panel fatigue and dropout. However, it is important to note, that global studies crossing broad time zones require an asynchronous approach.

Other variations include Real Time Spatial Delphi, a modified Real Time Delphi and Change Oriented Delphi. The Real Time Spatial Delphi entails the expert panel forming consensus on a geographic area in real time (Di Zio et al., 2017), usually with real time map updates. This type of Delphi may be used for forecasting or event planning. The Change Oriented Delphi uses a participatory research approach “to instigate a process for change that continues to utilize the talents and knowledge cultivated in the participants beyond the traditional boundaries of Delphi studies” (Kezar & Maxey, 2016, p. 150). This modified approach involves stakeholders and may more time for the study to better understand the change process (Kezar & Maxey, 2016).

## **DELPHI ADVANTAGES AND LIMITATIONS**

There are advantages and limitations to all varieties of research methods. Before designing a study, the researcher should become familiar with both the limitations and advantages; of course, the limitations



should be carefully considered but should not be allowed to discourage the use of Delphi, since the research method should be selected based on the research question(s). In addition, Cuhls (2004) pointed out that the danger of the Delphi is to regard the results of the study as fact, rather than an estimate.

## **Delphi Method Advantages**

The literature identified five advantages for Delphi use. First, the ability to bring together an anonymous panel of experts and gather consensus with little cost and flexibility for the panelist is one of the more important advantages of the Delphi methodology (Stitt-Gohdes & Crews, 2004). Second, consensus may emerge from representative expert opinion in areas of uncertainty (Dalkey, 1972; Delbecq et al., 1975; Helmer, 1983; Linstone & Turoff, 2002). A third advantage lies in the anonymity or confidentiality of the communicative process (Ziglio, 1996). For example, participants may feel more comfortable presenting views that may be unpopular or participants may be more willing to revise their positions when given the opinions of other experts (Yousuf, 2007). Moreover, Okoli and Pawlowski (2004) contended the use of a Delphi methodology allows experts to participate through electronic means and therefore, the group maintains anonymity from the public and from each other. Therefore, the nature of an expert panel comprising participants from multiple locations also lends itself to the virtual and independent communicative nature of the Delphi (Ziglio, 1996).

In addition, Delphi studies often allow for a deeper level of participation by the expert panel due to multiple iterations and opportunities for participants to revise and comment on responses provided (Okoli & Pawlowski, 2004). Furthermore, anonymity and confidentiality of the process prevents the domination of the process by a few outspoken individuals (Green, 2014; Helmer, 1983; Ziglio, 1996), although Sackman (1975) raised concern that anonymity might contribute to a lack of accountability for those views that were expressed. A fourth advantage of the Delphi methodology is the flexibility found in the iterative process. Panel members who are in different geographic locations and have limited availability within their schedules may participate fully at their own convenience (Brooks, 1979). Through this process, experts with differing backgrounds and perspectives may participate and contribute to those complex problem areas where they have expertise (Turoff & Hiltz, 1996). Finally, Pill (1971) indicated that use of the Delphi feedback process contributed to an increase of creativity and the knowledge base of the research topic being examined.

## **Delphi Method Limitations**

According to the literature, The Delphi Method also has limitations. Delphi researchers Linstone and Turoff (2002) listed possible reasons for the failure of a Delphi study:

- Imposing monitor views and preconceptions of a problem upon the respondent group by overspecifying [sic] the structure of the Delphi and not allowing for the contribution of other perspectives related to the problem;
- Assuming that the Delphi can be a surrogate for all other human communications in a given situation;
- Using poor techniques of summarizing and presenting the group response and ensuring common interpretations of the evaluation scales utilized in the exercise;

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- Ignoring and not exploring disagreements, so that discouraged dissenters drop out and an artificial consensus is generated;
- Underestimating the demanding nature of a Delphi and the fact that the respondents should be recognized as consultants and properly compensated for their time if the Delphi is not a part of their job function. (p. 6)

In addition, Linstone and Turoff (2002) and Sackman (1975) suggested that other limitations of the Delphi methodology may arise from a less than adequate design or execution of a Delphi study. They also noted biases from the researcher may result in an artificial consensus or a lack of consensus. Additionally, if the researcher too strictly structures the study, the range of participant input may be limited and thus affect the outcome of the group. Thus, care must be taken in analyzing the information provided by the participants as well as allowing for the iterative process to take place or participants may be inhibited from providing appropriate feedback.

Another area noted in the literature that may be considered a limitation of the methodology is found in the selection of the expert panel (Linstone & Turoff, 2002). To this end, Dalkey (1972) concluded the Delphi Method may not provide a clear or appropriate consensus due to cultural influence of some expert panels or from a lack of information when the experts may not know an answer to a problem or question. Conversely, Linstone and Turoff (2002) suggested that although the make-up of the expert panel is a potential limitation of the methodology, the issue is common to all group decision techniques and not specifically with the communication process used in the Delphi Method. In addition, researcher bias can intentionally or unintentionally direct the feedback if care is not taken to set aside any bias. For example, the researcher could choose to not resubmit new suggestions back to the panel for voting which could skew the study. Finally, a major disadvantage of the methodology is the length of time the iterative process may take to complete (Linstone & Turoff, 2002; Ziglio, 1996). Miller (2006) found that Delphi studies require a minimum of 45 days and many much longer. This long process may result in participant dropout and therefore result in inaccurate consensus if motivation is not supported (Linstone & Turoff, 2002; Ziglio, 1996).

There are also noted limitations when using the Internet to deliver the Delphi surveys. Garson (2014) pointed out that access issues could be a problem, such as those using a work computer and having to deal with firewalls and email and Internet filters. In addition, panel members who are not technically literate could experience problems that may lead to frustration and ultimately, abandoning the survey and study. However, these limitations are not significant in comparison to the advantage of using an online survey tool that allows email updates, data collection, and automatically performs statistical analysis.

## **RECOMMENDATIONS**

The Delphi Method is a research technique with iterative survey rounds used to gain consensus among a panel of experts on the given research topic. Linstone and Turoff (2002) formally defined the technique “as a method for structuring a group communication process so that the process is effective in allowing a group of individuals, as a whole, to deal with a complex problem” (p. 3). Cuhls (2004) recommended a checklist of considerations before beginning a Delphi study. The following is a modified version:

1. What should the study cover (how broadly)?

2. How will the research process be organized and who will manage all the various parts?
3. Who will the experts be and how will they be identified?
4. What kinds of results can be expected?
5. What questions should be asked?
6. How will the survey be organized?
7. What kinds of data analysis will be needed to answer the research question accurately?
8. How can the study results be applied or implemented?

One of the most discussed problems with Delphi Method is non-response of panel members since the study may take a long period of time. Skulmoski et al. (2007) suggested that to keep the panel members engaged, the amount of time between survey rounds should be kept as short as possible to maintain enthusiasm and participation. Therefore, a conscious effort should be made to quickly turn around the data analysis for each Delphi round and to release the next survey. A web-based survey tool that enables online survey data collection and analysis will assist with efficiency in data collection and analysis.

To address issues of possible non-response, in addition to frequent, ongoing communication by the researcher, several preventative measures may be employed. First, participants should be fully informed as to the nature, scope, and time requirements of the study. Secondly, members of the panel should be given copies of the final research reports as a possible aid to their practice (Garson, 2014). Stitt-Gohdes and Crews (2004) commented that panelists receiving recognition as experts in their field may be adequately motivated to fully participate until the end of the study. Often, participants are offered the opportunity to join the researcher in panel presentations resulting from the study. In addition, Turoff and Hiltz (1996) advocated individual invitations for each participant to provide more information about the group and the project and therefore encourage participation. According to Stitt-Gohdes and Crews (2004), it is important to provide the goals of the study and to build rapport within the group. Additionally, panellists who believe they are able to contribute information and judgments through the panel discussion may also be motivated to participate (Stitt-Gohdes & Crews, 2004).

Finally, Powell (2003) pointed out that a common mistake in Delphi research is a failure to provide an interpretation of consensus for each round. Although most studies show convergent of opinion by the final survey round it widely varies from study to study on the level of consensus, which can confuse the reader. In addition, panelists may lose interest as they do not see a possible end to the study because they do not fully understand the process for consensus.

## **FUTURE RESEARCH DIRECTIONS**

The Delphi Method has been in existence for more decades and has been used in a variety of disciplines. However, there still seems to be a lack of consensus on what is the best way is to statistically determine consensus. Research-based guidelines for consensus, stability, and stopping criteria would provide further rigor. In addition, a method for developing criteria for expert selection could be beneficial to researchers. Further research is needed to help standardize the research process across the disciplines. This would allow for better follow up comparison studies to be performed.

Rowe and Wright (2011) urged researchers to focus on more empirical use of the Delphi Method that include a clear process for how to use the method. Similarly, Mullen (2003) called for a well-defined process for providing feedback with aggregated scoring. In addition, Beech (1999) suggested that more

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research is needed in using the Delphi Method as a management tool to show differences of opinion and facilitate discussions regarding those differences.

Finally, Linstone and Turoff (2011) suggested the use of structural modeling in order to “provide the user with the ability to make subjective estimates about a problem that can be used in a computer program to build a working model of the person’s cognitive mode” (p. 1714). They also encouraged the use of the Delphi Method with online class discussions where the discussion boards allow pen names to be assigned to students for anonymous Delphi participation on class topics, possible role playing, and voting.

## **CONCLUSION**

Many have suggested that the use of the Delphi Method for research has increased tremendously in the last fifty years (Cuhls, 2004; Fischer, 1978; Hsu & Sandford, 2007; Linstone & Turoff, 2011; Twinning, 1999). This may be due to the ability to design online asynchronous surveys as well as because the strength of the Delphi Method is its use of iterative rounds with anonymity to summarize information and provide controlled feedback in order to build a consensus of an expert panel (Beech, 1999). This process of group communication provides opportunity for beginning input from experts, collation of input (feedback), and distribution of this feedback back to the expert panel for additional review (Dalkey, 1967; Yousuf, 2007). However, whatever the reason, Delphi Method does provide knowledge judgment and outcomes generated by an expert panel of knowledge experts (Day & Bobeva, 2005). The Delphi Method has been modified and improved so that various applications can be made. In fact, in a time of ongoing change in industry, it is a great method for developing a strategic plan for an organization because stakeholders can anonymously participate without pressure from others.

Advances in technology have made online surveying a practical approach for research in the 21st century. For Delphi studies in particular, online surveys have become increasingly popular to allow global expert consensus building across many disciplines (James & Warren Forward, 2015). While technological literacy was once a limitation restricting expert involvement (Garson, 2014), with increased complexity and possibility, researchers are now called to upskill their own technological administration skills. With further advancements in the areas of online conferencing, Real Time Delphi, Real-Time Spatial Delphi (DiZio, Rosas, & Lamelza), participatory research in the form of change-oriented Delphi (Kezar & Maxey, 2014) and the rate of participatory app development, the future will undoubtedly hold, as Turoff and Linstone predicted, an upcoming “Age of Participation” (2010, p. 1718) introducing new possibilities for employing Delphi research methods. The Delphi Method has much to offer us...all because Dalkey (1972) believed that more “heads are better than one” (p. 15).

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# Chapter 25

## A Primer on Q-Method and the Study of Technology

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### ABSTRACT

*Qualitative methods are under-represented in the articles published by the main journals in Information Systems, which seem to privilege quantitative studies and statistical representativity of results, following the R logic. This chapter provides an in-depth description of Q-method and demonstrates how its use could be beneficial to studies of technology and could reinforce the transparency and validity of other qualitative methods. The focus of this chapter lies in explaining how Q-method works, so that readers are equipped to set up their own Q-studies. It is based on prior literature and ongoing reflections being held by Q-methodologists online.*

### INTRODUCTION

Q-method has been invented in 1935 by William Stephenson in order to capture individuals' operant and subjective points of view on a given topic, based on the use of concurrence theory and a forced distribution matrix. Essentially a qualitative research method, it is often qualified of quali-quantology or mixed method due to the use of a q-factor analysis to examine the data.

Q has been largely overlooked by researchers interested in the study of technology. For instance, in Information Systems (IS) research, i.e. research focusing on digital technology as a socio-technical artefact, only 20 papers can be retrieved (Gauttier et al. 2016; Gauzente, 2013). Yet, Q-studies have been published in major journals in the field (among others: MISQ, I&M, CAIS, JIT, OMEGA), indicating its potential for research related to technology. The fit between Q-method and IS topics has been mentioned several times in the literature (Gauzente, 2013; Thomas and Watson, 2002; Kendall and Kendall, 1993; Dos Santos & Hawk, 1988).

This entry describes Q-method and how it can be applied to IS topics to yield new insights. It provides a description of the current use and potential uses of Q in IS research as well as practical advice on how to set up a Q-study. Areas for future research are outlined. It is targeted towards any researcher

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interested in capturing attitudes to and experiences of technology, as well as those looking for methods to inform the design of technological artefacts and their evaluation.

The reader will notice that the different elements at play during a Q-study are designated as Q-(study, set, factor analysis, etc). The presence of the Q letter could be omitted, and other words could be used. However, the omnipresence of the letter Q in this text is consistent with the vocabulary used by Q-methodologists in publications. It also serves as a reminder to the reader that in this chapter every notion should be interpreted in regard to the Q approach and intentions, and not to the R logic with which the reader might be more familiar. Indeed, in contrast to positivist approaches and the use of R-methods, Q-method considers the self-referent subjective experience of reality (or here technology). It does not aim at a generalizable objective view of a phenomenon, nor does it look at the relationship between variables composing the phenomenon. Q-method identifies the shared perspectives on a given topic between individuals (Watts and Stenner, 2012).

## **BACKGROUND**

Q-method was developed by the psychologist Stephenson (1935; 1953) as an approach to capture people's operant subjective views of phenomena. Subjectivity is conceptualized as what '*emanates from a particular vantage point*' (Brown, 1993). Operancy refers to the fact that these views drive individuals' behaviors. It is a method suited to the identification of the drivers, barriers, and structuring elements of behaviors and experiences.

Q-method rests on two important pillars. One is theoretical and refers to concurrence theory, the other is methodological and uses Q-sorting procedure and Q-factorial analysis (Gauzente, 2010). First, the concurrence theory posits that meaning is dependent upon context and therefore not given *in abstracto*. The concurrence can be defined as the volume of available statements on a topic and is '*the common coinage of societies large and small, and is designed to cover everything from community gossip and public opinion to the esoteric discussions of scientists and philosophers*' (Brown, 1993). Meanings exist for each individual and vary depending on circumstances, but can also be shared with others, thus making interpersonal communication and interpretation possible.

The first step to conduct a Q-study is to generate these meanings. These constitute the Q-sample.

Then these meanings are ranked onto a Q-sort grid, i.e., respondents rank-order assertions according to the degree with which they represent their subjective view of one topic. The forced ranking distribution means that only a small amount of assertions can be selected as highly positively or negatively representative. The majority of meanings will be neutral. This process forces respondents to choose and structure their point of view. The respondents are designated as the P-sample. The result of the Q-sorting process by the participants is a Q-sort. The participants are invited to comment on their Q-sort and reveal how they interpret the elements of the concurrence as well as their own subjective point of view as revealed through the process of the study. Then, a factor analysis is performed to process the Q-sorts. Instead of individuals, assertions or statements are analyzed. In other words, the correlation matrix relies not on assertions but on individuals. This procedure is called Q-factor analysis. As a result, one identifies Q-factors, which are designated as view, i.e. shared views amongst participants. The views shouldn't be assimilated to groups of people as in typological approaches. The views are not a statistical representation of groups in the general population. Rather, they are shared operant views and interpretations of a topic.

Q-method is used in many different disciplines such as political sciences (on questions linked to evaluation and decision-making, but also to capture the structure of individuals' political views), education (capturing learning experiences), health studies (capturing carers' and patients' experiences), leadership studies, but is currently under-represented in IS research.

## **FOCUS OF THE ARTICLE**

The study of technology, as pursued in IS research, has traditionally adopted a positivist lens. In spite of a turn recognizing the potential of qualitative interpretive approaches grounded in social constructivism, sociomateriality (Scott & Orlikowski, 2013), or phenomenology (Boland, 1986) to study technology, the share of such research in major IS publications is still low compared to positivist studies. One can cite two main barriers to the diffusion of interpretive research in IS. First, interpretive research refers to a complex epistemological positioning, with a plethora of traditions and approaches that the researcher must choose from. These approaches are often described at a philosophical level, and little guidance is available to implement them. Second, interpretive research can be seen as biased by positivists: the process of interpretation seems to depend on the subjective and hidden choices made by the researcher and does not offer the possibility to reproduce the process of analysis. Q-method allows overcoming these barriers (Gauttier, 2017), while identifying what drives and structures individuals' relationships to technology.

### **1. Epistemological Positioning**

Q-method is a qualitative method, which has been positioned as phenomenological and interpretivist.

According to Shinebourne & Adams (2007), Q can be qualified of phenomenological as it seeks meaning '*through exploring subjective accounts of phenomena from participants' perspectives, attempting to identify broad categories and common themes and a commitment to a collaborative engagement with participants.*' The classification is controlled by the participants as they rank and give meaning to assertions, while the role of the researcher is to exert discretion during the processing of the data (see 2.3) to ensure the views of the participants are correctly represented in the results. The views are given from the participants' perspectives, interpreted by the researcher.

### **2. Carrying Out a Q-Study**

Descriptions of the process of a Q-study have been given numerous times in the literature (Brown, 1993; McKeown & Thomas, 2013; van Exel and De Graaf, 2005, etc). Details are given concerning 1) the formation of the concourse and Q-set; 2) the administration of the Q-study; 3) the data analysis.

#### **2.1 From Concourse to Q-set**

The concourse can be of three different types:

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- 1) Naturalistic, i.e. gathered for the purpose of the study at hand through interaction with individuals during focus-groups or interviews (Brown, 1980). The individuals that helped to generate the concourse can be the participants of the subsequent steps of the study, although it is not mandatory.
- 2) Ready-made, i.e. already constituted in the literature or obtained through a literature review or constituted by a series of experts.
- 3) Hybrid, i.e. the researcher completes a naturalistic concourse with elements found in the literature.

There is no type of concourse superior to another. Rather, the researcher must choose to form the concourse in the way that is the most appropriate for the study at hand.

The meanings included in the concourse can then be expressed in the form of pictures, textual statements, and sounds. One could also consider using smells. The vast majority of Q-studies are performed using textual elements. Pictures are used to interrogate children's points of views, to study arts, or in human-computer interaction to look at preferred designs (for instance such an approach was implemented by the International Society for the Scientific Study of Subjectivity in 2015 to survey members' preferences for the new website).

The concourse constitutes the available list of elements on a topic, and as a consequence, it can be rather large. There is no magic number on the number of assertions to keep. Q-studies with as many as 1575 statements - even if broken down into smaller sets to administrate the study (Hilden, 1958) and as few as 14 statements (Manera & Wright, 1981) have been conducted, never mind their relevance. However, it is noteworthy that a bigger amount of statements decreases the chance of having random correlations. At the same time, one should consider the format of the assertion and the capacities of participants: children, patients with serious conditions, elderly, might not be able to rank as many assertions as other populations. Brown (1980) recommends a set of 40 to 50 assertions. Sets of 24 statements have been discussed as potentially not enough to cover the nuances of points of view even though they might be enough for a given topic (Q-method listserv, 2017). In essence, the researcher is responsible for making sure the participants can express their point of view through the assertions proposed while maximizing the quality of data collection. Indeed, given that the participants have to consider these elements holistically to rank them in the Q-sort grid, it is necessary for the researcher to think of the maximum number of elements that can be kept for the final sorting procedure (the Q-set) so that participants can handle the amount of assertions and rank them. Different strategies can be adopted to ensure the representativeness of the Q-set: one can gather the concourse and transform it into a Q-set with participants through focus groups (naturalistic approach); or one can pilot the Q-set and ask participants whether they think the concourse allows them to represent their point of view, then refine the Q-set in accordance to the answers before administrating the Q-study.

The Q-set must avoid redundancies. As the sorting occurs using a scale from positive to negative, there is no need to keep opposite assertions: if a participant disagrees with the statement "eating ice-cream makes me happier", (s)he can put it in the negative scale on the grid, eliminating the need for a statement "eating ice-cream doesn't make me happier". There is no need to keep statements that carry the same meaning as they would be placed in the same column, putting other statements in higher or lower columns only in an artificial manner and rendering the exercise cumbersome for the participant.

The Q-set might include what is seen as a double-barreled statement in so far as in context and for the participant, it is not double-barreled. For instance, a statement taken from an interview and included in a q-set might seem to be double-barreled, but for the interviewee, it is one statement, one unit of meaning, not two, and therefore can be ranked and interpreted as one statement. Moreover, Brown (Qserv

list, 2018a) explains that ‘*The other statements surrounding this particular (double-barreled) statement within Q-sort 1 will provide hints as to the particular connotation of the statement, and it is this that demonstrates the gestaltist principle in Q—that the parts gain meaning in relation to the whole.*’ Each statement takes a particular meaning because of how it relates to others, lifting ambiguity on how it is to be interpreted.

In order to assess the understandability of the Q-set and check for redundancies, it is possible to pilot the Q-set before administrating the studies.

## 2.2 Administrating Q-Studies

Five elements need to be taken into account when one administrates a Q-study:

- 1) The selection of participants: Q-method is, in essence, a qualitative method as it looks at the subjective. It can be used with a small number of participants (Van Exel & De Graaf, 2005). Single case studies are even possible (Stephenson, 1974), as Q aims at representing the point of view of individuals in an extensive manner. In Q, the selection of participants is purposive (Brown, 1980): they are chosen because of how they relate to the topic and/or question researched, i.e. one might want people with specific experiences or characteristics to participate. For instance, in IS research individuals with experience of a specific technology (Gauttier et al., 2016), or individuals who identify themselves with given forms of technology use (Gauttier & Gauzente, 2018) might be selected. Brown (Q-method listserv, 2018b) suggests designing a p-set matrix. This matrix can include key characteristics of participants pertaining to the object of the study, and characteristics pertaining to participants as individuals. It allows designing a participant selection strategy. For instance, to study the drivers and barriers acceptance of technology, one can consider levels of use so that the first line of the matrix is composed, for instance, of a) heavy user; b) occasional user; and c) non-user. Then, the researcher might want to integrate considerations of gender, adding another element to the matrix, which takes a 3x2 structure.

Assessing the representativeness or weight of each view identified through the Q-factor analysis is not the objective of Q-method. Such a typological approach would be a misunderstanding of the underlying logic of the method. The views have value as they signal the existence of hindrances and drivers of behaviors, with these hindrances and barriers being operant and not only plausible. Comparing views is thus possible, no matter how many people share the view. (McKeown & Thomas, 2013).

- 2) The conditions of instruction: Depending on the topic of the study, the researcher may opt for a simple design requiring the individual to sort the assertions only once from his/her point of view. Other designs can be implemented. Firstly, one can modify the number of times one proceeds to the sorting so as to see how one’s point of view evolves over time, given that some form of intervention is going on. Secondly, one can ask participants to sort the same assertions but looking at various angles of the topic. Thirdly, one can ask participants to proceed to the Q-sort from the point of view of someone else.

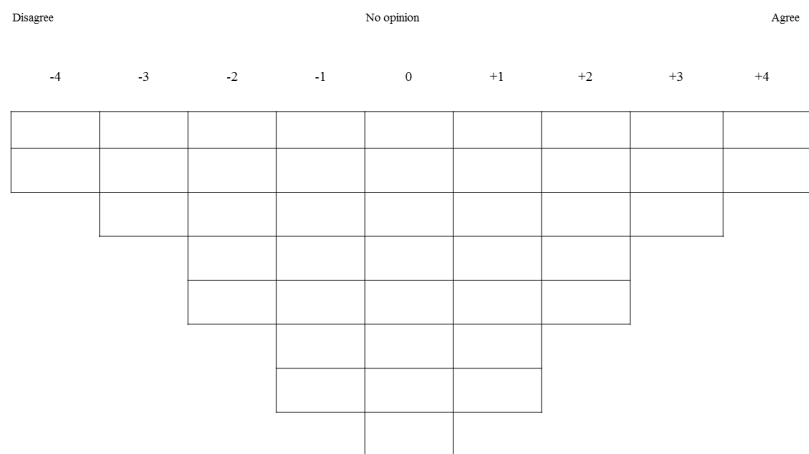
For instance, Gauttier and Gauzente (2018) asked participants to proceed to Q-sort 9 times to express their view on mobile technologies overall, different technologies, the point of view participants attributed

to their parents, and the point of view participants would attribute to future/children's generations, and then general opinion again.

One could also imagine that instead of having individual Q-sorts, a group could be asked to proceed to Q-sorting.

- 3) The design of the forced distribution matrix: The matrix that will be used to proceed to Q-sorting follows a (quasi) normal distribution, allowing participants to place a few assertions to the extreme, and then more and more, to reach a peak in the middle (see Figure 1). The number of cells in the matrix must match the number of assertions. Recommendations about how to build the scale have been given by Brown (1980, p.200): *'As to the range of the distribution: naturally, the larger the number of statements, the wider the range of available scores should be. As a rule, Q samples smaller than N == 40~can safely utilize a range of +4 to -4; from 40 to 60, a range of + 5 to - 5 is generally employed; beyond 60, +6 to - 6 is not untypical, although there are few occasions for a wider range to be utilized since Q samples exceeding 60 are rarely required; most Q samples contain 40 to 50 items and employ a range of +5 to - 5 with a quasinormal flattened distribution.'*

*Figure 1. Example of a forced distribution matrix*



- 4) The choice of medium: Data collection can be facilitated online through the use of specific platforms (at the time of writing, WebQ and Qsoftware are used). Some studies have used Skype to conduct the Q-sort, sending the assertions and grid to the participants in advance. It can also be conducted face-to-face. Key criteria for choice are mainly linked to convenience and access to samples. It is however important that the medium allows following the procedure described below.
- 5) The procedure to follow: Firstly, participants are asked to read through the list of assertions entirely, so they have a holistic perspective of it. Then, participants are asked to look at each assertion again and class it in one of three piles (agree, don't agree, no opinion). This helps participants to get acquainted with the Q-set and to proceed to a first sort of ranking, which should help them when they have to produce the detailed ranking demanded in the forced distribution matrix. Q-methodologists do not record this initial rough classification and participants are allowed to modify this classifica-



tion ranking, for instance, an ‘agree’ or ‘no opinion’ as negative in the forced distribution matrix if they want to. The third stage is, therefore, ranking in the grid. Participants can modify their ranking as much as they want and the researcher records only the last version of the grid that satisfies the participants. All assertions must be ranked, and the grid must be respected. The order of the statements in a column is not important.

Sometimes participants have more assertions they disagree with than ones they agree with, meaning that elements ranked under the longest column are not neutral. This is perfectly acceptable as it still means that the statements going to the middle are not the ones the participant focused on and that drives his point of view. Participants can rename the column if they feel they must to convey their idea. Then, a post-sorting interview is conducted where participants have the possibility to explain how they proceeded to the ranking as well as the subjective meaning they give to the statements. Typically, the participants are asked to explain how they choose the statements that are the most extremes and are asked to summarize their point of view.

### 2.3 Data Analysis

Data is processed through free software. PQmethod has been validated by the Q-methodologists and used in most studies. Ken-Q has been more recently developed and its validation is still in process.

The data is analyzed through a Q-factor analysis process, which is an inverted factor analysis (Stephenson, 1936) in so far as a Q factor analysis looks for what is common between people, instead of what is common between variables.

*Table 1. A representation of Q and R matrixes (adapted from Gauzente, 2013)*

Q-Matrix			R-Matrix		
Assertion	Individual A	Individual B	Individual	Assertion 1	Assertion 2
1			A		
2			B		
3			C		

Firstly, one needs to proceed to the factor extraction through centroid method (Brown, 1980) or through the Principal Component Analysis method.

Secondly, one rotates the factors, commonly through Varimax. The rotation can be done according to statistical or theoretical motives. Theoretical rotation refers to rotating the factors so as to choose a solution that can be interpreted and explained, even though it is maybe less satisfying statistically. On each factor, defining factors are flagged, based on factors loading.

Then, one obtains the following data: views identified and how the individual Q-sorts load on each factor, a correlation matrix, a table with eigenvalues and variance, a synthetic Q-sort for each factor (each statement with its place on the grid and z-score), distinguishing statements between factors, consensus statements between factors, and arrays of differences. The analysis can lead to the identification of bipolar factors, with significant Q-sorts that load in positive and negative ways.

It is important that the researcher first analyses each view independently of the others, capturing the nuances in each view, before adopting a holistic perspective looking at differences between them.

## **SOLUTIONS AND RECOMMENDATIONS**

Q-method brings results that are of different nature than the ones of R studies. While R studies aim at giving results that are generalizable and representative of a given population, Q gives a representation of the subjective points of views of participants. The non-generalizable character of the results obtained through Q-method is often understood as a limitation, one which is actually common to other qualitative methods. Q-studies are not subject to any form of validation through replication: they capture individuals' points of view as they are, not attempting at verifying their truthful or objective character (Stephenson, 1988). Another limitation can be seen in the presence of subjectivity throughout the process (designing the Q-set, making choices during the factor analysis, and then the subjectivity of the interpretation). However, the role of the researcher's subjectivity in constructing data is a problem common to many methods. Q offers the advantage of allowing to document this subjectivity at different stages: the criteria used to structure the concourse and the steps followed for the factor analysis can be explicitly formulated. The interpretation of qualitative data is therefore open to contradictory analysis as the whole process is traced (Gauzente, 2013). Besides, Q-method allows documenting the researcher's subjectivity alongside the participant's by using the researcher as a participant (Gauttier, 2017).

The interpretation remains subjective but can be verified for its plausible character as they are grounded in mathematical results (the z-score of the statements, the array of difference for statements between factors). Q-studies are easily reproducible as the Q-set is shared with results (Gauzente, 2013; Gauttier & Gauzente, 2016). Q-method allows reaching a deep understanding of individuals' perceptions of a topic as it respects nuances (Gauzente, 2013), and allows to capture complex relationships between points of views (bipolar factors, negative loadings).

With criteria of transparency and reproducibility of both the data collection and data interpretation stages, Q qualifies as a rigorous research method.

At the same time, Q-method is characterized by a process allowing Researchers to be creative to find new ways to shed light on research topics in a qualitative manner. Q can be used to document topics traditionally tackled by studies of technology. In her recent synthesis on Q-method in Information Systems Research, Gauzente (2013) identifies three types of utilization of Q-method:

- Profile identification and fit evaluation
- Identification of structuring trends as an alternative to Delphi technique
- Deep understanding of attitudes, representations, and perceptions.

Over the last five years, a number of papers applying Q-method to IS topics appeared, making use of the creative aspects of Q. They mainly look at attitudes and drivers of perception:

- Study of non-use (Gauttier & Gauzente, 2018)
- Design evaluation (O'Leary et al, 2013)
- Cultural comparison (Gauttier et al., 2016)
- Exploration of TAM and UTAUT (Laden et al., 2018)

Another group of papers comes to address more methodological issues, suggesting that Q can complement our understanding of previous theories, filling in gaps, as well as capture phenomena so far left in the dark:

- Q to study motivations of non-use (Gauttier & Gauzente, 2018)
- Q to perform single-case studies (Gauzente, 2015), i.e. to provide the extensive description of the point of view on a topic, or technology, of one individual.
- Q as a complement to interviews, increasing the transparency of data interpretation in the context of IS study (Gauttier, 2017)

Given the strength of Q-method and its ability to complement traditional research on technology, its use and development are recommended to IS researchers.

## **FUTURE RESEARCH DIRECTIONS**

Q-method can be used to shed light on topics so far explored with different methods. Q-method can also be the object of further methodological research, of interest to IS researchers as well in order to reinforce the place occupied by qualitative research in the field. Four areas are identified:

- *Complementarity between methods suitable for IS studies and Q*: Studies looking at the complementarity between Q-method and R data (Thompson et al., 2013), Q-method and interview data (Gauttier, 2017), have been conducted. One could investigate the complementarity between Q and other methods such as ethnography data, applied to the study of technology.
- *The phenomenological character of Q-method*: A phenomenological turn was called for in IS in 1986 (Boland) and accomplished only to a small extent. Q could be seen as a way to accomplish this task if one could establish in a more detailed manner how Q can be used best to fit the concepts of phenomenology.
- *The use of Q to document the researcher's subjectivity* can be explored further. This could lead to use the method in combination with other qualitative methods, as a validation process, which could reinforce the acceptability of qualitative research overall in the field of IS.
- Further research could explore topics through different senses, using *sounds, picture, text* to question technology, opening a new way to research the relation to and experience of technological artifacts.

## **CONCLUSION**

This chapter showed that Q-methodology offers a large potential to be explored by IS researchers. The versatility of Q allows designing creative and innovative approaches to data collection, which can be applied to any topic. Through its flexibility, the method can allow to yield new qualitative insights on trends, fits, and perception of technologies which can allow overcoming gaps presented by major IS theories developed through quantitative studies such as the technology acceptance models. Perhaps more importantly, Q can be used to support the generation of high quality qualitative data and, or, strengthen

the reliability of the interpretation of other forms of qualitative data, which is much needed in a field of studies where quantitative data remains mostly used, and lead to developing a new stream towards the development and study of technology.

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## **KEY TERMS AND DEFINITIONS**

**Centroid:** A factor extraction method which uses a specific form of communality estimation detailed in Brown (1980).

**Concourse:** The volume of possible assertions, in any format, on a given topic.

**Conditions of Instruction:** Designates the perspective that participants are asked to sort the Q-set from.

**Flagged on a Factor:** Signifies that a Q-sort is representative of this factor view based upon factor loadings (correlations between the sorters and the factors). Other outputs from Q are based only on sorts flagged on a single factor.

**Hand Rotation:** Sometimes referred to as judgmental rotation or theoretical rotation, this factor rotation is graphical rather than mathematical. This method allows researchers to rotate based on theoretical considerations rather than statistical ones.

**PCA:** A standard, mathematically unambiguous factor extraction procedure that can be found in standard textbooks on factor analysis.

**P-Set:** Those who proceed to the Q-sorting.

**Q-Sample:** The assertions chosen from the concourse to be submitted to participants for the q-sorting procedure.

**Q-Sorting:** The ranking of the assertions of the q-sample by participants (P-set) on the forced distribution matrix.

**Varimax:** Common orthogonal factor rotation method where the sum of the variances of the squared loadings (squared correlations between sorters and factors) is maximized.

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Section 5

# Methodology Review and Application

# Chapter 26

## The Grounded Theory Methodology in Organization Studies Within Qualitative Research

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### **ABSTRACT**

*It is believed that the grounded theory (GT) approach works best for researchers who are concerned about the gap between academic and practical research because of the importance they place on applied research. The chapter aimed to explain the GT methodology and identify its application in organizational research context. In this regard, the theory-research-development-practice cycle, the factors affecting the choice of organization research methodology, and the types of qualitative research methods have been studied by comparing four qualitative methods of case study, GT, phenomenological study, and content analysis. Also, in this regard, the four main GT schools including Glaserian classic GT, Straussian GT, Charmazian constructivist GT, and Clarkeian situational GT, as well as the GT process involving the phases of data collection, coding, memo-ing, sorting, and validation are discussed in detail.*

### **INTRODUCTION**

Grounded Theory (GT) is recognized as an influential methodology for research inquiry of much academic debate aiming at providing practical explanations. Because the GT approach is interdisciplinary, it is not expected that it will be possible to develop mature theoretical frameworks within specific academic areas. Rather, it emphasizes the importance of accessing the tacit knowledge of different organizational actors. According to Burden and Roodt (2007), the GT approach was used until the 1970s in the studies related to management and organizational behavior which were published in major journals, and GT is one of, if not the most important, approaches cited in qualitative studies used in these fields.

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The GT approach since its introduction in 1967, and then its application in the fields of management and organization in the 1970s, has gradually become a research method of interest in the toolkit of analysts. The best application of the GT is to understand the social processes and subsequent psychological consequences inherently associated with organizational change in a seemingly turbulent environment. Rather than describing what is happening, the process of theorizing in GT ensures that it explains what is actually happening in practice as a strength of this method. In addition to expanding the perspective, this approach can help participants learn how to manage their lives in the current environment and with future organizational challenges. Therefore, this method is very suitable for organizational research. According to Kenealy (2008), GT is applicable to areas that have not been explored before and there is a research gap and new perspectives are needed to identify areas of management involvement and improvement. Until recent times, most organizational and management research training focused heavily on quantitative techniques specially in UK universities, that has caused ignoring qualitative methods, particularly GT. There is still a lack of experienced grounded theorists and GT training although despite the growing trend of applying qualitative research and teaching them.

Organizations are very complex and diverse environments involving complex entities that operate in different ways within them. Therefore, the use of multilateral approaches that can provide a broad, dynamic analytical picture of organizational hierarchy should be valuable to researchers and organizational consultants. In this regard, research methods should be more aware of the complexities of organizational environments and, as far as possible, rather than simplify them, consider them in order to achieve more accurate results. As the theorist should approach an inquiry with a fairly open mind it is likely that a kind of general theoretical account will be emerged in the particular investigation during the grounded initially approaches. In the organizational context, the research related to the pilot stages of large scale survey inquiries, the case studies of organizational behavior in order to produce more than an impressionistic account from their inquiries, the research related to the world organizational features as corporate cultures, that are well-suited particularly to qualitative investigation, and the studies concerned about detailed, locally based fact collection and interpretation essential to perform excellent organizational research can be appropriate subjects in which the GT approach can be implemented (Martin and Turner, 1986).

The purpose of this chapter is to explain the methodology of GT and to identify its application in organizational research. In this way, the theory, research, development, and practice cycle, the factors affecting the choice of organization research methodology and the types of qualitative research methods have been studied by comparing four qualitative methods of case study, GT, phenomenological study, and content analysis. Also, in this regard, the four main GT schools including Glaserian classic GT, Straussian GT, Charmazian constructivist GT, and Clarkeian situational GT, as well as the GT process involving the phases of data collection, coding, memo-ing, sorting, and validation are discussed in detail.

## **ORGANIZATIONAL STUDIES AND GT**

In order to study all types of organizations, it is possible to use the GT approach. Research conducted based on the applied methodology of the GT approach, leads to an increased understanding of the research situation and the underlying problems affecting the research topic. All aspects of human resource management, from employment planning through the recruitment and selection of employees, appraisal and rewards, to motivation and career planning can be involved with such issues. The researcher during

the research process, (through comparative analysis) on the specific issues of the field under study, can obtain data that can lead to more attention to these issues using systematic interviews or observations. Susabowska (2016) aimed to verify whether the use of this methodology can also be appropriate in the area of human resource management, because the GT methodology in management science significantly influences the organization of qualitative research and it is possible to apply its procedure to explore study most research areas.

By using and application of GT approach, and observing the focus of this approach on the way of change perception by the people who are affected by the process and recognizing that available change management models do not adequately capture the complexity of the change process from the perspective of change recipients, the GT-based research design is mainly focused on helping change management theory (Rosenbaum et al., 2016).

The GT approach is suitable for consumer research, for example in areas where discovery of relevance is applied to consumer behavior. These areas can include analysis of the consumption of technological products, women's clothing in the workplace, and the symbolic meaning found in advertisements. Of course, it is likely that many consumer research studies have employed GT methods without recognizing or acknowledging them and what was mentioned are merely studies that explicitly state the use of the GT method (Shivany and Velnampy, 2015).

Also, the special features of the GT method make it particularly suitable for addressing key problems in industrial marketing, such as complex decision-making processes and interactions in social networks and relationships, because in these areas, in-depth analysis of the data is needed. It is a real-life experiment. For this reason, GT has been suggested in previous research as a useful method for industrial marketing research because it has provided valuable research opportunities for this research. Of course, the GT use in industrial marketing in particular has not been as extensive as marketing or management fields, and even with the potential for using in such research, it has sometimes been misunderstood and ignored (Keränen and Oinonen, 2019).

GT-based studies in the fields of organizational tensions, conflicts, dialectics, and paradoxes in organizational science have increased. In this regard, Fairhurst and Putnam (2019) have developed an integrated approach that helps identifying different types of organizational opposition and responds to them, as well as promoting assessment of the potential impact of the power and dynamics of micro-organizing.

With the increasing popularity of qualitative research in the field of medical research, the GT method has also been emphasized by most researchers in this field (Sbaraini et al., 2011). For instance, transition to motherhood for women with post-natal depression, clients' experiences of disengaged moments in psychotherapy, perceptions of the schizophrenia recovery concept, and the experiences earned by nurses with working in acute psychiatric settings are among the subjects of newly published GT articles (Tweed and Charmaz, 2011).

Companies have found it challenging to attract and retain top talent Millennials due to the costly job-hopping. Rivers (2018) developed a theory that demonstrates the Millennials' process for deciding whether to job-hop or stay in a company. Mohammed and Norman (2016) investigated the practices of organizational information sharing of the millennial generation with the use of GT. Haider et al. (2019) considered the motivation for sustainable work of local government employees via a rigorous GT method of inquiry. They argued that with Millennials' default perception of the public sector as relatively conservative, bureaucratic and slower to change, the recruitment and retention of young people and Millennials in the public sector is becoming increasingly difficult.

Kwanjai (2011) applied GT on cultural intelligence in general and cross-cultural intelligence that was practiced at selected Dutch firms in Thailand in particular. Plessis and Marais (2015) focused on the challenges facing leaders engaged in multicultural education by conducting a GT research. Ziyatdinova (2017) aimed at identifying the role of the cultural intelligence from the viewpoint of a leader and examining the influence of culture on leadership with the use of GT. Rozkwitalska et al. (2016) applied the GT approach to analyze and propose a model of the social interactions in multicultural environments of multinational corporations. Draucker et al. (2014) proposed that GT research could be beneficial more to health disparities research.

As it utilizes the natural context in which the phenomena studied happened, GT is attractive to researchers in order to examine and understand social constructions. This method is considered as one of the most effective and widely used methods in qualitative research in specific fields such as sociology. Although often overlooked in the field of sport management, the GT method components (usually coding techniques) are often used for data analysis in sport-related studies. As such, researchers combine GT with other research methods. Of course, combining different methods as long as it is justified and appropriate to the research problem is a valid way of doing research. The main consequence of this mixture of GT with other research methods is that the analysis departs from the basic principles of GT, namely the emergence of theory (Sotiriadou and Shilbury, 2008).

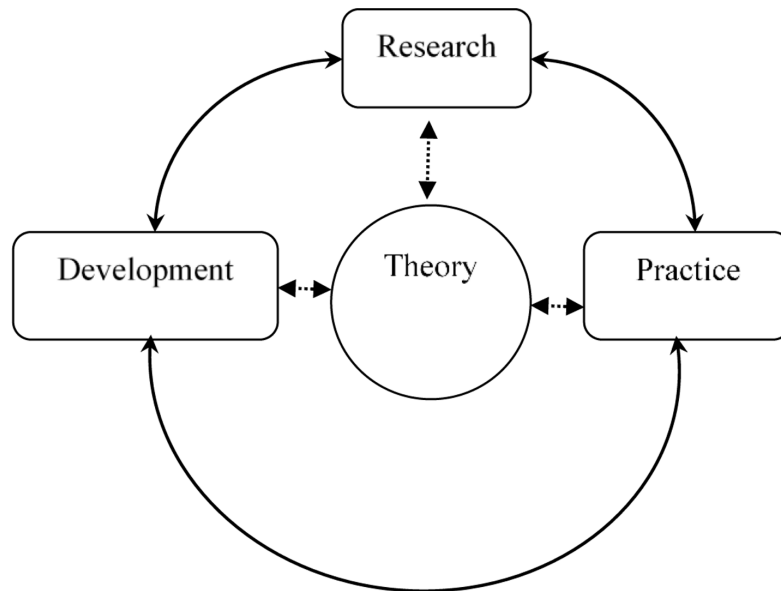
## **THEORY-RESEARCH-DEVELOPMENT-PRACTICE**

Organizations are (1) complex systems, (2) open systems, and (3) dynamic systems that are worth studying. However, many claim that academic research has failed to provide useful solutions to problems in practice in organizations because of the widening gap between science and practice in organizations. This criticism is increasing, since the findings of academic studies and consulting are not applicable for experts in the organizations. There is also growing debate between advocates of normal science and action science methods (Swanson and Holton, 2005). As a vital cycle, theory, research, development, and practice together compose allows refining ideas progressively through evolving from concepts to practices and from practices to concepts. This cycle of theory-research-development-practice shows a systematic application of research methods applied to advance the knowledge used by both organizational researchers and practitioners.

Some researchers warn us about building relationships between theory, research, development and practice. For example, Kahn (1970) forced philosophers and researchers to rethink the assumptions underpinning the scientific method and in this way, paved the way for alternative, post-positivistic approaches to research in the behavioral sciences when proposing the notion of a scientific paradigm. Swanson and Holton (2008) believe that using qualitative methods such as GT allows the theory to emerge from the data obtained from practice and experience; the theory does not necessarily exist prior to research and can be derived from it. Therefore, the model of theory, research, development, and practice in organizational research contains such a warning.

This model demonstrates the need for awareness to enrich all professional areas. Also, exchange between domains is multilateral; as such, each domain can be a good starting point for subsequent domains in the cycle. Whether one begins with theory, research, development, or practice, the improvements can occur in the profession. Hence, according to Swanson and Holton (2008), each of the domains of the cycle can either informs or is informed by the other domains.

*Figure 1. Theory-Research-Development-Practice cycle (Swanson, 2007)*



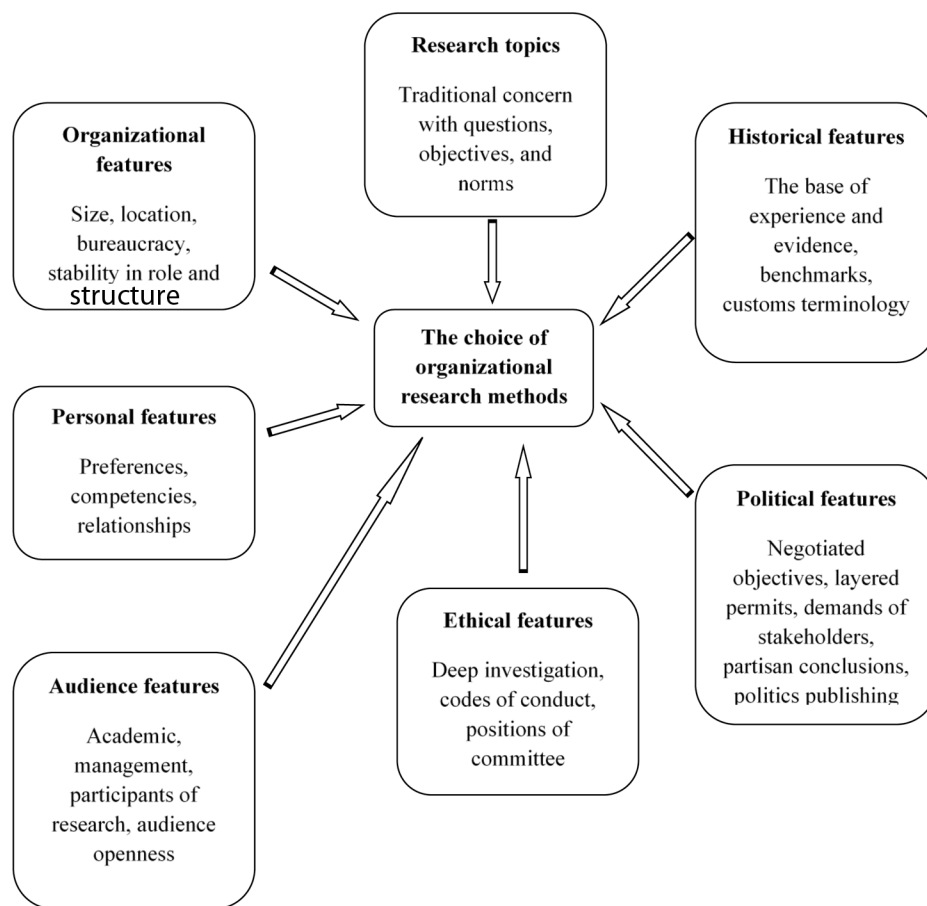
As an important use of research that can be done through GT, and research can also proceed along it, is the theory building cycle. Although the current benefits of the rich theoretical foundations are more widely used in organization-focused practice areas, much of this research is rooted in relevant areas of study. In order to gain greater understanding of a wide range of human and organizational phenomena, additional theories are needed and in this regard, research can play a dual role in proceeding the organizational knowledge. Research leads to the creation of knowledge that can be directly applied to the practical improvement and development of basic theories. Organizational development efforts are one of the unique opportunities to enter this cycle. In this domain, the conditions are already in place due to the demand and the need for radical changes and conditions to create fundamentally new organizational models and methods. The problems and challenges facing functioning organizations is completely felt when starting with practice. These challenges are an inexplicable source of research problems. During a cycle period from practice to research or practice to development, it traces the path of familiarity with the problems that persist in organizations and stimulates their research and development efforts (Swanson and Holton, 2005).

## **QUALITATIVE RESEARCH METHODOLOGY**

The three trends of widening boundaries, the multi-paradigmatic profile, and the methodological inventiveness are characterized the field of organizational research. Thus, as can be seen in figure 2, selecting the research methods, formed by aims, epistemological concerns, and norms of practice, is also affected by organizational, historical, political, ethical, audience, and personal factors, generally seen as a problem that must be overcome. Also, researchers in a field can have a variety of goals, for example some of them consider the creating solidarity, identifying causal links, building models, or testing hypotheses. Others are more concerned with rich descriptions and capturing complex texture of the corporate world

as a valuable goal of its kind. The different positivist, critical, phenomenological, constructivist, interpretative, feminist, and postmodern perspectives can be displayed within the organizational research.

*Figure 2. Factors influencing the choice of organizational research methods adopted from (Buchanan and Bryman, 2009)*



The features of the focal organization such as size, location (single or multiple sites), and whether it is a commercial organization or a professional bureaucracy have always been more or less significantly effective in the logistics of fieldwork. In this regard, the choice of method can be highly dependent on the stability of the research setting. In case that the organizational context is changing, the predetermined and inflexible methods are less or perhaps inappropriate.

Because of this, organizational research is less cumulative, and researchers often overlook the risk of historical records and evidence obtained from long-term research and past results in the field. Therefore, organizational researchers can be advised to consider past experiences, frameworks, conceptualizations, and findings that may influence current choices of research focus and appropriate research methodology. Due to the nature of organizations as political entities, it may be difficult for scholars to observe contractual norms of observer neutrality by avoiding entanglement in power and politics issues. Negotiating

on research objectives, obtaining permissions to access respondents, aligning with stakeholder groups, and attempting to publish findings are four ways through which researchers are routinely engaged in political actions.

Of course, the open-ended nature of some qualitative research, which raises some ethical questions, has led to the focus on ethical scrutiny in the field of organizational research. For example, in some research approaches, such as GT, it is emphasized that research questions are not as clear as possible prior to data collection which leads to issues during the investigation. Before selecting methods so relevant audiences will perceive their approach as having been appropriate, the organizational researchers often need to concern about how and by whom their findings will be used. Therefore, the potentially conflicting interests and expectations of academic, management, and research practitioner audiences need to be considered by researchers.

Often when selecting a research topic, researchers look at topics that interest them, and use a method in which they are competent and skilled as it is easy to use. Although some researchers may opt for face-to-face encounters and challenges when identifying patterns and collecting qualitative data, others may prefer computer screening, and discovery of relationships in quantitative data. The choice of subject as well as how the research is influenced by the researcher's training and skills also apply. Generally, beginner researchers are not allowed to apply their personal preferences and biases to technical decisions related to research methods.

Because of providing a guidance to conduct of the research and its effect on the quality and the accuracy of research results, the selection of a research methodology is crucial. Qualitative methods have long been used in industrial and organizational psychology research. As one of the qualitative research methods, GT, that is a method in which data are systematically collected from multiple sources, has been widely used by management, industrial and organizational researchers. As a neutral, unbiased research frame GT can be used by researchers anywhere with varied epistemologies. The GT usefulness for developing new theory or fresh insights into old theory, generating theory of direct interest and relevance for practitioners, and the ability to uncover micro-management processes in complex and unfolding scenarios are among the reasons of GT popularity in organizational research (Kamasak et al., 2017).

Case studies, GT, phenomenological study, and content analysis are several different methods for conducting a qualitative research that are compared during this chapter:

## **GT PROCESS**

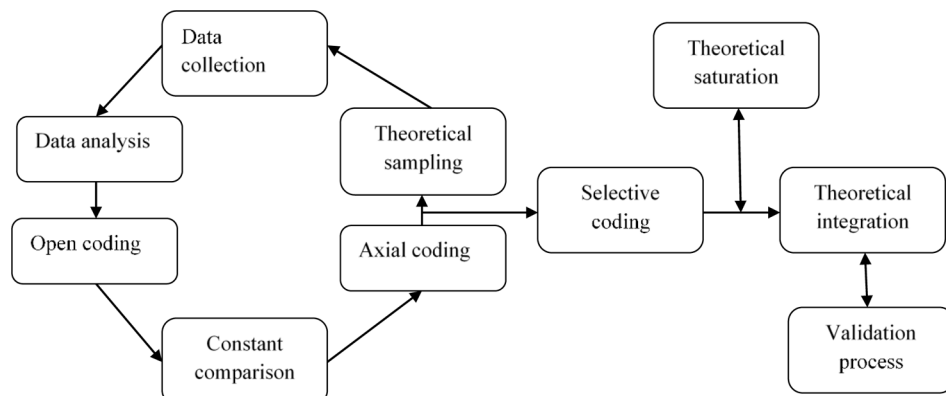
The researcher can develop a theory that is formed by the views of participants to explain a process, action, or interaction by making use of GT process described in this section using description of various GT schools. The approach constitutes a procedure through which theory emerges by employing a continual to-and-fro between data collection, coding, categorizing, memo writing, sorting, validating, and writing. Figure 3 summarily shows the steps of the GT approach.

**The Grounded Theory Methodology in Organization Studies Within Qualitative Research**

*Table 1. Comparison of three qualitative research methods (Williams, 2007)*

Research methods	Key features
<b>Case study</b>	A plan, an event, an activity, a process, or one or more individuals are in depth explored by the researcher. Multiple sources such as direct or participant observations, interviews, archival records or documents, physical artifacts, and audio-visual materials are extensively used for the purpose of data collection for a case study. The researcher must spend time with the people studied on-site interacting. The lessons learned or patterns found that connect with theories should be included in the report.
<b>Grounded theory</b>	Researcher try to use this structured approach to shape and elicit theory grounded in data, through deriving a general, abstract theory of a process, action, or interaction grounded in the views of participants in a study. In a format called constant comparative method, this process includes collecting and analysing the data, and repeating the process. Several sources such as interviewing participants or witnesses, reviewing historical videotapes or records, observations while on-site can be used to obtain data. Five dimensions of describing the research question, literature review, describing the methodology, data analysis explaining the theory, and discussing the implications constitute the GT report structure.
<b>Phenomenological Study</b>	It emphasizes on the participant's perceptions of the event or situation and the study tries to answer the question of the experience. Because of conducting interviews, the method for a phenomenological study is similar to that of GT. In order to understand and interpret a participant's perception on the meaning of an event the method of data collection is conducted through long interviews (1-2 hours). Writing the research questions to explore the meaning of the experience, conducting interviews, analyzing the data to find the clusters of meanings, and ending with a report that furthers the readers understanding of the essential structure of the experience is the procedural format. The study gathers data that leads to identifying common themes in people's perceptions of their experiences.
<b>Content Analysis Study</b>	A process of systematic and detailed review of the content of a particular body of research material with the aim of identifying patterns, themes or biases. The procedural process for the content analysis research designed to achieve the highest objective analysis, which involves identifying the body of the material being studied and defining the characteristics and characteristics of the object being studied. The data collection process is a two-step process. In the first step, it is necessary for the researcher to analyze the materials and place them in a large table that lists the specifications. Secondly, in order to report the results in quantitative format, the researcher has to perform statistical analysis. The description of the materials under study, the properties and qualities studied, a description of the methodology, the statistical analysis showing the frequency table, and drawing conclusions about the patterns, themes, or biases found in the human communications and data collection are the five sections of a research report.

*Figure 3. Steps of grounded theory based on Strauss and Corbin (2008)-Straussian grounded theory (Roman et al., 2017)*



## **Gathering GT Data**

Since the emphasis in the classic GT is on the analysis of actions and process, the first questions to be asked in this way are:

- What's going on here? This question helps develop our vision by asking what happens on two levels:
- What are the fundamental social processes?
- What are the fundamental social psychological processes?

In various types of qualitative research, the intensive interviewing has long been used as a useful method of data collection. Basically, if the interview is a targeted conversation, intensive interviewing allows for an in-depth examination of a particular topic or experience, and is therefore a useful method of interpretation goals. Interviewing is also a contextual and negotiable method.

There may be many commonalities between focus groups and less structured interviews, however, these features are more than just collecting the similar data from many participants at a time. In the focus group approach, a group discussion exists on a specific topic that is organized with specific research goals; a discussion that is purposeful, controlled, and recorded by the researcher (also known as a moderator or facilitator) (Gill et al., 2008).

While a structured format for data collection can be obtained from the interviews, respondents may say one thing in an interview but do something different in practice. Observations are a very useful form of data collection and it is the only way to reveal the dichotomies. A meaning, that is different from the meaning the participants assign to it themselves, may be assigned by the researcher to an action or interaction. Observations should always be supported with interviews and/or documentary evidence because nonverbal behaviors can be easily misinterpreted, especially in the cross-cultural context (Hull, 2013).

Although all the method of qualitative research involves the analysis of texts, some scholars study texts that are partially or completely derived from other sources. For instance, elicited texts can provide us a means to create data, through the research in which participants provide written data in response to a researcher's request. The elicited texts involve research participants in writing the data. On the other hand, the researcher had no hand in shaping the extant texts which are consist of varied documents. The elicited and extant texts can be used as either initial or complementary sources of data.

The next concept is to scrutinize how data is collected and which data you obtain helps to locate them. When coding and categorizing, such scrutiny also helps you since it enables you to place your emerging analysis in its social context. As a result, you can make more accurate comparisons when encoding data.

## **Coding in GT Practice**

The first analytic step, which is the process of defining what the data are about, is qualitative coding. Coding refers to simultaneously categorizing, summarizing, and accounting for each piece of data by naming parts of data with a label. As a first step in moving specific statements in the data to create analytical interpretations, GT coding creates your bones of analysis. These bones are later assembled into a skeleton during theoretical integration. Therefore, coding is not just an initial step, but rather an analytical framework on which you can analyze (Charmaz, 2006). Coding can be considered as an initial phase involving naming each word, line, or segment of data; subsequently, a focused, selective phase



is conducted in order to use the most significant or frequent initial codes to sort, synthesize, integrate, and organize large amounts of data. The types of coding as substantive coding and theoretical coding are proposed by Hull (2013). Also, three different types of substantive coding: open, axial, and selective coding are identified by Strauss and Corbin (1990).

The first step, open coding, guides us toward the next decisions about defining conceptual categories. The questions like: “What does the data indicate? Pronounce? From whose point of view? and, what theoretical category does this specific datum indicate?”, were asked during the open coding. Line-by-line coding which refers to naming each line of the written data, is the first step in coding for many grounded researchers. Hundreds of codes can be produced during the coding process. The initial codes help researchers to separate data into categories and to see processes. According to Strauss and Corbin (1990), similar codes have to be grouped into categories in order to recognize patterns in the data. A category is code at higher abstraction level and the categorization is obtained by asking and answering the following questions related to each code (Charmaz, 2006):

- What category of the phenomenon does this code belong to?
- What do the phenomena identified with these codes have in common?
- What might this phenomenon (and related code) be about?

Strauss and Corbin (1990) believe that each category has properties, as the characteristics or attributes of a category and dimensions that refers to the possible locations of properties on some kind of continuum. Since they form the basis of relationships between categories and subcategories, the properties and dimensions of each category need to be recognized and developed.

Performing the initial coding results in the following outputs:

- Concepts including emotions, events, actions, trends and situations that their label should be an action (gerund).
- Categories including concepts grouped by phenomena through a comparison and aggregation of concepts that mostly represent meanings, tacit assumptions, or implicit actions.
- Properties and dimensions including aspects of a category that are mentioned, and their possible values.

Focused coding coding occurs after you have established some strong analytic directions through your initial line-by-line coding. The purpose of focused coding, which refers to use the most significant and / or frequent earlier codes to sift through large amounts of data, is to synthesize and explain larger segments of data. The strength of focused coding in GT is that rather than passively reading your data, you will actively participate in the process (Charmaz, 2006).

As the second phase of coding in Straussian GT, axial coding can specify the properties and dimensions of a category and so, it can relate categories to subcategories. Although this may be occurred in an early stage of development, axial coding follows the development of a major category. Sorting, synthesizing, and organizing large amounts of data and reassemble them in new ways after open coding are among the purposes of axial coding (Charmaz, 2006).

The purpose of the third phase of coding in Straussian GT, selective coding, is conceptually integrating, categorizing, and relating all created categories during axial coding to the core category as one cohesive

theory. Thus, the results of axial coding have been further explored, integrated, and validated. In other words, the selective coding is quite similar to the axial coding, but it is done on a more abstract level.

The theoretical coding is related to the concept of how substantive codes may relate to one another as hypotheses integrated into one theory. In short, the possible relationships between the categories you have developed in your axial coding can be identified in theoretical codes (Charmaz, 2006).

*Table 2. A series of 18 theoretical coding families (Glaser, 1978; Charmaz, 2006)*

<b>Coding families</b>	<b>Concepts</b>
<b>The six Cs</b>	Causes, contexts, contingencies, conditions (... of pain suffering consequences).
<b>Process</b>	Stages, phases, phasings, transitions, careers, chains, sequences (career of a patient with chronic pain passages).
<b>The degree family</b>	Extent, level, intensity, range, amount, statistical average, standard deviation (extent of pain suffering continuum).
<b>Type family</b>	Types, classes, genres, prototypes, styles, kinds (kinds of pain – sharp, piercing, throbbing).
<b>The strategy family</b>	Strategies, tactics, techniques, mechanisms (coping with pain management).
<b>Interactive family</b>	Interaction, mutual effects, interdependence, symmetries, rituals (interaction of pain experience and coping reciprocity).
<b>Identity-self family</b>	Identity, self-image, self-concept, self-evaluation, transformations of self (self-concepts of pain patients social worth).
<b>Cutting-point family</b>	Boundary, critical juncture, cutting point, tolerance levels (point career of pain patient of no return, start of chronification in the medical turning point).
<b>Cultural family</b>	Social norms, social values, social beliefs (social norms and beliefs of pain patients).
<b>Consensus family</b>	Contracts, agreements, definitions of the compliance situation, uniformity, conformity, conflict (conflict of treatment types of pain management).
<b>The unit family</b>	Group, family, organizational, aggregate, territorial, societal, status and role units (status and role of pain patient in pain management).

The causes, contexts, consequences, conditions, etc. that constitute the C-family can be seen as equivalent to the coding paradigm proposed by Böhm (2004). While you are in the early stages of research, coding, as the first step in a journey that enables you to bridge between imaginary events and describing them into insights and theoretical possibilities, routes your work in an analytic direction.

## **Memo-Writing**

Most commonly associated with GT, providing memos is as a methodological strategy that yet all qualitative approaches can be used to improve their procedure. However, with lack or substandard memo-ing as a major shortfall of most qualitative research studies, many researchers fail to capitalize on this valuable tool (Birks et al., 2008). The qualitative researcher is able to engage with their research to a greater degree through the use of memos; a level that would not have been possible without this strategy. By building strong relationships between data, researchers can feel that their sensitivity to the concepts in it has increased.

As a pivotal intermediate step between data collection and writing drafts of papers, memo-writing constitutes a crucial method in GT since it can increase your speed in analyzing your data and codes early

in the research process, by applying pauses and analysis of the obtained code you may use at any time and in any way. By increasing your involvement in the analysis and helping to raise the level of abstraction of your ideas, sequential memo writing during the research can help your research process. As you write successive memos, specific codes can be emerged and visualized as theoretical categories. They also help you to clarify what is happening in the field when you use them from the start. According to Strauss and Corbin (1990), the complexity, density, accuracy of memos increases with the researcher's move from data collection to theorization during memes evolution.

Through giving you a non-linear, visual, and flexible technique to understand and organize your material, clustering can help to get start as a shorthand pre-writing technique. This technique can be used to create a tentative and alterable chart or map of your study. Free-writing, that can liberate your thoughts and feelings, refers to put pen to paper or fingers to keyboard and writing for eight minutes to begin, longer with practice; it can also encourage you to: 1) form fresh material and 2) unlearn past immobilizing habits, and 3) write in a natural voice.

### **Theoretical Sensitivity**

According to Strauss and Corbin (1990), theoretical sensitivity is related to the ability to have insight, understand and give meaning to the data, and to detach the relevant from the irrelevant. Also, Glaser (1978) suggests that theoretical sensitivity, or entering the field with an awareness of the subtleties of the data can be used with the initial aim of sensitize the researcher. It is also possible to gain theoretical sensitivity from professional experience and when preliminary review the literature. Of course, it is needed to distinguish between identifying sensitizing concepts that can help to quickly collect data, as well as using these concepts to impose a framework on data.

### **Theoretical Sampling, Saturation, and Sorting**

You seek pertinent data to develop your emerging theory during the theoretical sampling. Through sampling to develop the properties of your category or categories, you conduct theoretical sampling until no new properties emerge. Thus, in order to integrate your emerging theory, you saturate your categories with data and subsequently sort and/or diagram them. Sampling to develop a researcher's emerging theoretical categories distinguishes theoretical sampling from other forms of sampling. By conducting theoretical sampling, the researcher is encouraged to advance the analysis and thus can improve his research by (Charmaz, 2006):

- determining the relevant properties of the categories
- Increasing the accuracy of the categories
- Providing the substance to move the material from description to analysis
- Increasing level of abstraction and generalization of analysis
- Grounding the conjectures in data
- Specifying the analysis relationships between or among the categories
- Increasing saving on the use of theoretical statements.

In the GT methodology, you start at the initial sampling stage, while the theoretical sampling will guide you. The purpose of theoretical sampling, rather than demographics or increasing the statistical

generalizability of your results, is to obtain information to help build your categories. Random samples of individuals with characteristics that represent the population under study are needed in many qualitative studies. Grounded theorists, unlike qualitative researchers who seek to use their data for statistical inference about the target population, are more likely aimed to fit their emerging theories with their obtained data. Also, sometimes the grist is proposed by grounded theorists for the emergent hypotheses that other researchers might pursue, while quantitative researchers test preconceived hypotheses.

When will the data collection end? What criteria are used to stop this process? The standard GT's short answer to this question is: stop working when your categories are saturated. Theoretical saturation is something that should be aimed at grounded theorists. Grounded theorists use the strategies like sorting, diagramming, and integrating your memos as inter-related processes to service the theoretical development of the analysis. It is needed to order memos according to their similarities, connections, and concepts of categories and their properties that are contained in the memos in the sorting phase that cause creating patterns in the memos, and subsequently, shapes the outline of the theory. Also, new ideas can be generated in this phase that should be captured in additional memos as the analyst compares ideas to ideas (Glaser, 1978). Providing a visual representation of categories and the relationship between them is the advantage of diagrams, by which, concrete images of our ideas can be shaped.

## **Validation**

Since validation is one of the most important steps in GT development in order to analyze the relevance and representativeness of the study in terms of the phenomenon, it is suggested to discuss with the participants about the categories obtained from data as well as the representativeness of the theoretical model of the GT. Using data validation, the researcher can pursue information that will help develop more complete explanations and thus allow for further research or appropriate reorientation. Hence, it is possible using validation to analyze whether the theoretical model represents the reality under study, as well as discuss its applicability to other spatial and temporal domains, that enables the modification and addition of new elements to improve the interpretation of the phenomenon under study. The strategy of selecting a conversation circle is adopted in Adamy et al. (2018) among the strategies that could be utilized to validate the data and the theoretical model in GT, with the purpose of co-constructing a theory in collaboration with the participants. As a collective resonance method, the conversation circle consists of creating spaces for dialogue, in which through questioning, sharing information, and reflecting before acting, people can express themselves, listen to others and to themselves, and thus stimulating the construction of the individuals' autonomy.

Through support of critical speaking and sensitive listening, the circles in this dialogical construction provide collective or textual knowledge and hence, lead to the possibility of interaction between the participants and sharing of information that helps to ensure the validity of the theoretical model.

Glaser (1978) in the Glaserian classic GT, reaffirm the criteria by which, it is possible to remain the standards in order to assess the quality of a GT. The four criteria reaffirmed by Glaser include fit, function, relevance, and adaptability (Holton, 2008):

- The fit criterion that refers to extract conceptual codes and categories from the data collected rather than using pre-conceived codes or categories derived from existing theories.
- The function criterion that refers to the GT's ability to describe and interpret behavior in a substantive area in order to predict future behavior.

- The relevance criterion that refers to the focus of theory on a core concern or process emerged in a substantive area. The data conceptual grounding indicates the significance and relevance of this core concern or process that way, it guarantees relevance.
- The adaptability criterion that refers the ability of theory to be continually refined with the emergence of new data to bring new categories, features and dimensions to the theory. This dynamic feature of GT guarantees its perpetual relevance and value in the social world from which it is rooted.

*Table 3. Operationalization of the two conversation circles (Adamy et al., 2018)*

Conversation circle 1	Conversation circle 2
Date 1	Date 2
Objective 1: presenting the categories, the diagrams, and the study's theoretical model	Objective 2: validating the theoretical model
Participants 1	Participants 2
Steps 1: <ul style="list-style-type: none"> <li>· Presenting the objectives of the study and conversation circle</li> <li>· Presenting the methodological approach</li> <li>· Reading and requesting of signing of the informed consent form</li> <li>· Interpreting and validating the data related to codes</li> <li>· providing the phenomenon, categories, and representative diagrams</li> </ul>	Steps 2: displaying the phenomenon, categories, and representative diagrams

Severe adherence to the complete GT method is vital in order to increase the potential for a rich multivariate conceptual theory. It cannot be said that the GT was used in the wrong or right place, but one only has to check to what extent it is fit, relevant, functional and adaptable. Therefore, GT should be constantly evaluated by readers on the basis of these criteria.

Glaser (1992) also proposed other important requirements relating the quality of GT that should be considered by researchers. First, the importance of the field that make the researcher to understand what is happening; second, the significance of theory which is grounded in reality; third, the nature and importance of experience in the field for the participants and researcher with its gradual evolution; and fourth, the active role played by the people involved in shaping the world around us through symbolic interaction processes.

Other important requirements suggested by Glaser (1992) as denoting the quality of GT also drew the attention of the researcher. These include the following: (1) the significance of the researcher getting out into the field to understand what is going on, (2) the importance of theory which is grounded in reality, (3) the nature and significance of experience in the field for the participants and researcher as continually evolving, (4) the active role of persons in shaping the world they live in through the processes of symbolic interaction.

## **GT SCHOOLS**

Since each of the creators of the different GT approaches use the word theory in a different sense, in this section, it is tried to compare the coding tools used in four different schools (e.g. two versions, status,

**The Grounded Theory Methodology in Organization Studies Within Qualitative Research**

approach or model exist in the Strauss and Glaser approach). For example, in the Glaser approach, GT is abstract, while it is complex for Strauss; for Charmaz, it is related to theorizing an argument about the world and Clark considers it to be the theory of comparisons. With formal, traditional, classical objective terms, Glaser tries to differentiate the Glaserian approach from other approaches. Whereas Charmaz uses constructivism to differentiate his approach while, Clark's uses the analysis of the situation to distinguish Clarkeian situational approach.

*Table 4. Positions on the nature and purpose of theory in grounded theory (Apramian et al., 2017)*

Glaser and Holton (2007)	For Glaser, theory is not expressly descriptive and aimed to do what description cannot do namely transcend person, place, and time. In summary, he refers to produce what sociologists call formal theory which is a theory developed or discovered for a conceptual area of inquiry – such as status passage, social stratification, formal organization, or stigma. Glaser pursues sociological theory at its highest levels of abstraction. Glaserian GT attempts for saving in the coding of data and creation of categories. A more tentative coding and memo-ing process repeats in Glaserian GT, as the researcher returns to the data collection. Glaser's version of the iterative process relies on the presumption of what he calls emergence. Enough iterations of comparison can lead to the construction of a core category that is broadly explanatory and under which almost all observed behaviours and reports fall which is referred to the emergence concept.
Strauss (1987)	The complexity of a theory dominates its level of abstraction in terms of Strauss. As a term used by philosophers of science as a shorthand for the impossibility of discovering linear cause and effect relationships, complexity refers to unpredictability and unreliability that doesn't yield to human understanding for a constitutive. Strauss's emphasis on complexity coaxed the definition of theory toward broader interpretations in the work of others. Strauss wrote that depending on the purposes of the investigator, the final conclusions drawn in the course of the research can vary greatly by level of abstraction rather than focusing purely on formal theory. Strauss is interested in exceptions to his categories in a different way. Strauss argues for the importance of what he calls a 'coding paradigm'. The six 'Cs' are adopted in Strauss's coding paradigm as a coding family. Strauss's coding paradigm, despite this apparent simplification, tends to intensify the analysis. Strauss's version of analysis requires that induction, deduction, and verification enter into the research, rather than trusting purely in emergence and induction,
Charmaz (2006)	Charmaz emphasized that the early GT works stress discovering and analyzing a basic social process. The burden of rigor from exacting explications of exceptions is transferred by Charmaz to authentic representations of the words, actions, and stories, the marginalized voices of her participants. According to Charmazian GT, this approach can be used to reveal links between concrete experiences of suffering and social structure, culture, and social practices or policies. Amplifying the importance of gerund-based process coding is her first choice and de-emphasizing the importance of single core categories is her second choice.
Clarke (2003)	GT is being regenerated and updated in order to better address differences and complexities of social life articulated through the postmodernism. The purpose of theory in terms of Clarke, is to attract attention to certain aspects of social life and particular actors and their activities. In this regard, she uses the description of difference as a fundamental principle for her theory building process. According to Clarke, the core activity of a social world changes over time and can be read and experienced differently. She also directs the theory building process toward identifying silenced aspects of work. The pursuit of difference in the Clarkeian GT, comes from an analysis of codes in service to three types of maps including situational maps, social worlds/arenas maps, and positional maps. Each of these maps constitutes one of the missions of Clarke's reformed understanding of the purpose of theory: the description of difference and hidden work. The Clark's maps confirm his broader methodological strategy. The situational maps, as the first group of maps, are strategies for explaining the elements in the situation and examining relationships between them. The most important human, nonhuman, discursive, and symbolic elements of a situation are identified and charted by the situational maps which are essentially descriptive. Pushing the analyst toward looking for the unseen elements of the situation, the Situational maps are a product of a reframed analytic 'forcing'. The social worlds/ arenas and positional maps as the other two maps, both essentially provide an interpretive assumption about social processes. The analyst needs to break from reiterating social power structures to produce these maps. Also, the analyst's focus should be on stripping the positions in a debate from the people who hold them. Positional mapping uses description to create room for the reinterpretation of traditional power structures, by focusing only on describing the positions themselves, and removing questions of hierarchy and the implied value of the positions.

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The different approaches presented in GT all have common features as a family that are indicative of a GT approach. That GT is first a process that starts with inductive logic and involves simultaneous collecting, analyzing, and constructing theory, as well as, consistently comparing and writing memo, using theoretical sample and focus on the creation of a GT are the basic features that can be seen in Table 5.

*Table 5. Similarities between GT approaches informed by the literature (Rieger, 2018)*

<b>Explaining a process</b>	Describes a social process that includes detecting identifiable time steps with a definite beginning and end and criteria in the middle stages.
<b>Getting started with an inductive approach</b>	It starts with no idea to prove or disprove, and important issues come from people's explanations.
<b>Collecting and analyzing data and building theory simultaneously</b>	Analytics in the process of analyzing and collecting data begins with several interviews focused on developing theoretical ideas.
<b>Constant comparison</b>	for the purpose of identifying similarities and differences, developing successively more abstract ideas through comparing data with data, data with code, code with code, code with category, and category with category
<b>Memo-ing</b>	Providing written records of comparisons and analytical thinking about the data analysis process to develop theoretical ideas and direct theoretical sampling
<b>Theoretical sampling</b>	In order to elaborate the developing theoretical categories and address conceptual gaps, concepts derived from the early analysis after developing theoretical ideas, will guide the collection of additional data. It is mostly started with convenience/purposive sampling and then move to theoretical sampling. When the point is reached at which new data no longer provide theoretical insights, theoretical saturation is achieved as the criteria for stopping data collection.
<b>Building a grounded theory</b>	Theoretical abstractions that are grounded in the data and include the variation of participants' experiences are developed in this phase. Because of explicating delimited phenomenon in a particular area, most grounded theories are substantive theories. The theoretical ideas can be developed into a more formal theory encompassing a higher level of abstraction with broader applicability when they transfer across areas.

New researchers have difficulties in using GT and selecting between Glaserian GT and Straussian GT (Alammar et al. 2018). According to some scholars, since Glaserian GT assumes that there is an orderly real world that can be objectively observed, it can be regarded based on a positivist realistic ontology approach. While others believe that Glaserian GT is based on the assumption that 'the real world exists but at the same time, acknowledge that it is impossible for humans to understand it', then Glaserian GT is based on post-positivist critical realistic ontology. It is also believed that the purpose of Glaserian GT is the unbiased discovery of new knowledge and is based on an objectivist epistemology that assumes that the researcher is separate from the subject under investigation. According to Glaserian GT researchers, the data can represent a true theory. In the Straussian GT, the philosophical view is based on symbolic and pragmatic foundations and symbolic interactionist do not deny the existence of a reality, but rather view it as socially interpretable and believe that to understand human behavior, it is essential understand this construct. According to the Rieger (2018), the philosophical perspectives evolution was occurred in the context of Straussian GT which is based on that GT researchers have an interpretive role rather than seen as blank pages.

The reality, in terms of Charmazian grounded theorists, is a social construction. Charmazian GT researchers are more concerned with the "world created real in the mind and through the words and actions of its members" rather than denying the existence of the objective real world. According to Rieger

(2018), the subjective epistemology of Charmazian GT is based on the assumption that researcher and research are not separated and the knowledge is co-created. On the other hand, Clarkeian GT is rooted in postmodernism. Its creator, Clark, sought to develop a kind of GT that departed from its positivist foundations, and because she was a student of Strauss and a fan of his version of GT, and since the Strauss version is rooted in pragmatism, this led to this post-modern approach to GT (Rupsiene and Pranskuniene, 2010).

## **CONCLUSION**

Proper and intelligent selection of a methodology based on the knowledge of the underlying philosophical principles and the unique features of that method is essential for researchers when planning a research. One of the most suitable methods for conducting research in the field of qualitative research is Grounded Theory (GT) approach which provides guidelines for the simultaneous collection and analysis of data in order to develop theories about social processes which is rooted in real-world experiences. Since the GT approach has proven to be an appropriate approach to management research and leads to empirical analysis of policy development related to organizational development, the present chapter will explain this method and its applications in organizational research. Applying GT approach to organizational development can also enable the identification of open and theoretical codes and their relationships as understood in the organizations.

With the increasing evolution of the GT methodology, the applicability of this approach to organizational research is increasing. The distinct background of the GT approach has led to the development of several approaches that, although they have basic similarities, but are based on distinct philosophical assumptions that affect the way of implementation of the GT approach. The Glaserian classic GT, Straussian GT, Charmazian constructivist GT, and Clarkeian situational GT as the four GT schools have been discussed in the present chapter.

Also, the difference of GT process including collecting, coding, sorting, memo-ing, and sorting data has been studied in various GT schools. It is often claimed that academic research is not effective in solving organizational problems. In this regard, the theory, research, development and practical cycle are discussed to overcome this problem. Also, in this chapter, the factors affecting the choice of research methods in organizations, as well as the differentiation of qualitative methods including case studies, GT, phenomenological methodology, and content analysis have been discussed.

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# Chapter 27

## Designing a PhD Proposal in Qualitative Research

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### ABSTRACT

*This chapter looks at the main aspects of the research proposal designing in a qualitative research. The author explores a template of a research design to give a clear and well understanding about the different steps of research proposal. The author argues that there is no specific template that is universally accepted. This template includes all major aspects of a proposal in qualitative research. First, the topic provides the definitions of the main concepts such as qualitative research, research designing, and research proposal. Secondly, it provides a template that shows the key steps that a research student will follow while writing a research proposal.*

### INTRODUCTION

This is always a difficult task and also a challenge to a research student (either Masters or PhD) to design his/her research proposal, but most students are required to write this. Even many taught course students should enrol in at least one research methodology course as a part of their degree programmes. However, preparing a proposal is an important skill to them. Many research institutions often submit proposal in order to obtain research funding. In qualitative research, there is no universally approved template to draw this proposal. This kind of research refers to the human perception, human behaviour, human cultures, social norms and values, which are more complex and unforeseen issues. These are also varied according to time, place and context. However, a research student faces enormous challenges to write this kind of research proposal. Even though there is a wide debate whether it is possible to bring all aspects into the planning process of research designing. In general, a research proposal is a formal written plan, which accumulates ideas about a proposed study. This written document necessitates an extensive review of the literature, describing and analyzing what already has been documented related to

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the research problem (Gay, 1996). It should provide an overview of the essential information which will guide the development of the study. In a research proposal, the review of the literature should demonstrate that the researcher is entirely cognizant of the current empirical and theoretical knowledge pertaining to the proposed problem (Onwuegbugie, 1997). However, this is important to have a sound knowledge to design such project. A well-written research proposal should be concise, clear, and complete (Cook & Campbell, 1979), with ideas being logically built upon each other in order to justify a study. As such, proposal writing is a technical skill that is learned and refined with experience. Unfortunately, research indicates that compulsory writing tends to increase composition anxiety (Powers, Cook, & Meyer, 1979) that might be experienced by some students while writing a research proposal in order to fulfil a course requirement.

## **DEFINITION OF KEY CONCEPTS**

### **Qualitative Research**

Qualitative research is an important investigative tool in the behavioral sciences (Islam & Faruque, 2016). This kind of research is a situated activity that locates the observer in the world. It consists of a set of interpretive, material practices that makes the world visible. Qualitative methods have much to offer when we need to explore people's feelings or ask participants to reflect on their experiences. These practices transform the world. They turn the world into a series of representations, including field notes, interviews, conversations, photographs, recordings, and memos. At this level, qualitative research involves an interpretive, naturalistic approach to the world. This means that qualitative researchers study things in their natural settings, attempting to make sense of, or to interpret, phenomena in terms of the meanings people bring to them (Denzin & Lincoln, 2005). In the social sciences, qualitative research is a term that describes research that focuses on how individuals and groups view or understand the world and construct meaning out of their experiences. A number of referred definitions are mentioned below:

- Qualitative research is an inquiry process of understanding a social or human problem, based on building a complex, holistic picture, formed with words, reporting a detailed view of informants within their natural setting (Creswell, 1994).
- The way in which people being studied understands and interprets their social reality is one of the central motifs of qualitative research (Bryman, 1988, p. 8).
- Qualitative research based in an interpretive paradigm is exploratory in nature, thus enabling researchers to gain information about an area in which little is known (Liamputtong & Ezzy, 2005).
- Qualitative research uses a naturalistic approach that seeks to understand phenomena in context-specific settings, such as “real world setting [where] the researcher does not attempt to manipulate the phenomenon of interest” (Patton, 2001, p. 39).
- Qualitative research, broadly defined, means “any kind of research that produces findings not arrived at by means of statistical procedures or other means of quantification” (Strauss and Corbin, 1990, p. 17).
- The notion of researcher's involvement and immersion into the research by discussing that the real world are subject to change and therefore, a qualitative researcher should be present during

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the changes to record an event after and before the change occurs. However, both qualitative and quantitative researchers need to test and demonstrate that their studies are credible (Patton, 2001).

### **Research Designing**

A research designing is a blueprint for the collection, measurement, and analysis of data. It 'deals with a logical problem and not a logistical problem' (Yin, 1989, p. 29). It is an overall plan that a researcher chooses to integrate the different components of the study in a coherent and logical way. This gives an opportunity to a researcher to address the research problem logically and as explicitly as possible. This is true that a social research needs a design or a structure before data collection. A researcher needs to design a proposal that both fits and is obtained from the question, the chosen method, the selected topic, and the research objectives. It should be considered carefully at the beginning of the study and reconsidered throughout.

Some refereed definitions of research designing:

- Research design – this is the minimalistic definition – is a set of decisions we take in order to reduce or control bias (Maggetti, Radaelli, and Gilardi, 2012).
- Research designs are 'plans and the procedures for research that span the decisions from broad assumptions to detailed methods of data collection and analysis' (Creswell, 2008, p. 3).
- Research design 'deals with a logical problem and not a logistical problem' (Yin, 1989, p. 29).
- A research design as "a blueprint for conducting a study with maximum control over factors that may interfere with the validity of the findings" (Grove and Burns, 2005).
- A research design as "a plan that describes how, when and where data are to be collected and analysed" (Parahoo, 1997).
- A research design as "the researcher's overall for answering the research question or testing the research hypothesis" (Polit et al., 2001).

### **Research Proposal**

A research proposal is a fundamental part for a PhD student. Without a clear proposal, it is unlikely that a PhD student will not be able to embark on a systematic investigation and discussion of a problematic issue in his/her area of research. A research proposal is a demonstration of argument regarding the process, activities and the possible results (Boeije, 2010). It is a logical statement that reflects researcher's idea, thought and the nature and process of investigation in an organized way to convince the concerned authority about the justification of conducting the research (Abdulai, and Owusu-Ansah, 2014).

The initial step of the process starts with an idea of what a student would like to investigate. This idea is then formulated into a research problem/ question. In general, a research proposal is a planning document that outlines a student's thinking about a research problem and describes what is to be studied and how. However, it needs to plan. Without proper planning, it is very likely that a students' reading will lack direction, lack focus in writing and data collection will run into major problems. This is also true that having a research proposal is no guarantee that a PhD student will avoid these dangers, but having a clear proposal will certainly minimize wasted time. A research proposal is intended to convince others that is a worthwhile research project and that has the competence and the work-plan to complete it. Broadly the research proposal must address the following questions regardless of a research area and

the methodology is chosen: What plan to be accomplished, why a researcher wants to do it and how s/he is going to do it (Al-Ryami, 2008)

It is said that a research proposal is a specific kind of document written for a specific purpose. It is because, a research involves a series of actions and therefore it presents all actions in a systematic and scientific way. In this way, a research proposal is called a blue print of the study which simplifies outlines the steps that researcher will undertake during the conduct of his/her study. However, a proposal is a tentative plan so the researcher can modify his/her research idea on the basis of his/her reading, discussion and experiences gathered in the process of research. In short, a research proposal is a concise and coherent summary of a proposed research. It sets out the central issues or questions that a student intends to address. It outlines the general area of study within which a student's research falls, referring to the current state of knowledge and any recent debates on the topic. So, a student has chance to explain the significance of his/her project to organizations who might wish to fund or otherwise support it. The proposal also gives chance to a student to think through his/her research project, to refine his/her focus, and to predict any challenges that may arise. It may be helpful to consult his/her proposal at various stages in research process to remind himself/herself to be focus and to chart how project has progressed. In qualitative research, this kind of trail and errors are significant where a student needs to change/modify/add new ideas into his/her research proposal. The qualitative proposal writer can therefore only anticipate how the study will proceed. Sandelowski and Barroso (2003) argued that writing the proposal for a qualitative research methodology study is a double challenge because of the emergent nature of qualitative research design and because a methodology study entails describing a process to produce a process. It is argued that a qualitative research begins by accepting that there is a range of different ways of making sense of the world (that the truth is only valid in a specific context) and is concerned with discovering the meanings seen by those who are being researched and with understanding their view of the world rather than that of the researcher

## Key Steps in Research Proposal Designing in Qualitative Research

### *Title*

- The title should have minimum one independent and one dependent variable
- Minimum 3 words and maximum 10 words
- Not a sentence rather a group of words
- Words of the title or title should be self-explanatory
- No technical words or abbreviations

### *Statement of the Problem*

- Elaborate the title
- Find out some crucial and significant aspects to justify the rationality of the study
- Relate the study with some contemporary issues
- Relate the study with some international and national agendas
- Relate the study with national policies/plans/programmes

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### ***Objectives and Questions***

- Write one main objective and one main question
- Write minimum 2 and maximum 3 specific objectives and auxiliary questions
- The specific questions and auxiliary questions will look ‘what’, ‘why’, and ‘how’ queries
- The words of all objectives and questions will be very simple, easy, and understandable

### ***Literature Review: Concepts and Theories***

- Find some contemporary and relevant recognized literature e.g., books, journal research articles or reports (ideally 15-20)
- Locate all major concepts, define those concepts both theoretically and operationally
- Include minimum 1 and maximum 3 theories/approaches/models close with the study
- Find the literature gaps and place the proposed study how it will fill up this gap
- Consider some literature in world context, some continent, some country and some from particular city/community (if have)

### ***Methodology***

- Write the methodology section step by step: i) location of the study, ii) main research approach (qualitative), iii) main research method(s) (survey, case study, or ethnographic), iv) data collection methods, v) sampling and respondents’ profile, vi) data collections instruments, vii) data analysis techniques: reliability and validity
- Justify the use of methods (all steps) and sample size

### ***Ethical Consideration***

- Clarify which ethical body approves the research
- Contents of ethics
- Consent form
- Justify why this ethical guideline is important

### ***Philosophical Foundation***

- Epistemology

### ***Significance of the Study***

- Locate some aspects or problems of the country/area that relate the proposed study
- Find the relevancy of the study with country policy/planning/programmes
- How this study will be benefitted for the country or particular group of people

### ***Scope of the Study***

- Identify the main areas/aspects/concepts of the proposed study
- Targeted problems, population and community/location
- Involving institutions/agencies and stakeholders



### *Work Schedule*

- Provide a time plan in months that the study will be completed
- Use a gantt chart, put the main task such as literature review, development of methodology and data collection instruments, data collection, data analysis, report writing, thesis submission, and publication journal articles/book chapters

### *References*

- Insert all references alphabetically
- Follow the style of referencing that the university/research organizations suggested

### *Title of Research Proposal*

- Variables
- Word limits
- A group of words
- Self-explanatory
- No technical words or abbreviations

A PhD research title is a sensitive issue, and it is particularly true in qualitative research. There is a skin-tight statement that a PhD research title should be more specific, short, and sharp so that a reader can assume and understand the content and scope of the research. This is true that the subject matter of the qualitative research is more broad and complex that attempts to explore the complex and contextual issues of the society. Many cultural and local perspectives, geographical location and human behaviour are interrelated that may not be entirely possible to explore in a scientific manner. However, the title should be brief, concise and understandable. The jargon and complex/technical words in the title should be avoided rather use the self-explanatory and easy words so that the title can be easily understandable to the readers even to them who are not familiar with the topic. There is a wide debate how many concepts or variables should be included in the title. Or how many independent or dependent variables are essential in the title. In fact, there is no such kind of universal rules in qualitative research. Rather I believe that a PhD title is a combination of words (not more than 10 words and not less than 5 words) which clearly endeavours to explore new data on a causal relationship between minimum one independent and one dependent variable/concept. There may have one more independent and one more dependent variable, but the number may not be more than 2 and 4 respectively. It means that in some research titles, there may have 2 independent variables and 3-4 dependent variables, but these should be manageable within the time frame, resources and a researcher's individual capacity. This is agreed that a PhD title should not be too much optimistic or too much broad.

### *Statement of the Problem*

- Elaborate the Title
- Justify the Rationality
- Contemporary Issues
- International and National Agendas
- National Policies/ Plans/Programmes

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A research student is more stuck when s/he thinks about the statement of the research problem. In fact, this section should be written very carefully so that it captures the major thrust and aspects of the title. This is just a brief description of the research title. Many argue that it is the amplification of the title but not more than two ideal paragraphs. The more important is to justify the rationality of the title and carefully proves that this topic is contemporary, and it is researchable. It needs to interrelate carefully with the international and national agendas. Here, some findings from the previous studies can help to a research student to justify his/her research in a logical manner. But of course these findings should come from the mostly cited, significant and master piece of the literatures so that a reader or evaluator can rate a student that s/he has consulted the core literature those are closely related with the proposed research.

The most important task is to interrelate the proposed research with the current social policies/plans/programme so that it would be easier to justify that his/her research is contemporary, and it is worth to conduct. It is notably true that in every research, there is the investment of time and cost (financial and human resources). This is also an emerging aspect that the research should have some sort of evidence which has a greater policy implication.

### ***Research Question(s) and Objective(s)***

- 1 main objective
- 2-3 specific objectives
- 1 main question
- 2-3 auxiliary questions
- Ask 'what', 'why', and 'how' queries
- Simple, easy, and understandable

This is the toughest section in a PhD proposal. It is seen that a PhD student gives less care and time for this section. Here, each and every word will be very measureable and understandable. The rest of the sections/stages of a research proposal depend on the the research question(s) and objective(s). If anything is taken with confusion, the rest of the sections will progress this confusion which is bad for a research. Here, all objectives and research questions will be clear, concise and understandable.

There is no specific rule about the number of research question(s) and objective(s), but a PhD proposal in a qualitative research should have one main question and one general objective, and 2-3 auxiliary questions and specific objectives respectively. Regarding research question(s), there will be one main research question which is usually written with an interrogative mark. This interrogative mark will be inserted such a way that will carry the similar meaning of the research title, and there is no deviation. There should have 2-3 auxiliary questions, which will be the totality of the main question. Usually, each question will carry one significant variable/concept like a specific objective. Again, these questions will be very simple, clear and understandable, but will carry significant meaning. This is very important that each question will answer either 'what', or 'why', or 'how'. 2 or 3 different auxiliary questions will start with these words and then should put interrogative marks at the end of each question.

The general objective will be derived from the title, but not exactly the same as the title, rather a student should rephrase this title, and should write an easier statement of this title. The specific objectives should be written such a way that the totality of these specific objectives can be equalize of the general objective. Usually, each specific objective carries one variable, which gives a number of data on a specific area of the research. It should be very careful that this specific objective will be written

such a way that the researcher can get a particular aspects or some aspects of a particular area. This is also important that the specific objectives should be written such a way that these includes the context, causal relationship and detail data.

*Literature Review: Concepts and Theories*

- Contemporary and relevant
- Definitions of concepts
- Gaps in the literature
- World context
- Continent context
- Country context
- 1-2 theories/approaches/models
- Explain to fill up knowledge gap by the proposed research

The literature review is also hard to write. This step has two main sections. First section discusses the principal concepts used in the research, and the second section discusses the relevant theories/approaches/models. The principal concepts mainly come from the title or statement of the problem or objectives of the proposed research. These concepts needs both theoretical and operational definitions. The theoretical definitions come from the existing literatures or past studies. In this case, a student needs to identify the literature which are mostly relevant and contemporary. In general, a student should include the literatures which are contemporary and not more than 10 years back. In some universities or PhD supervisors advise his/her students ‘not to use more than 5 years old literature, if it is not very necessary’. This is because more than 5 years old data may not be compared with the present condition/situation of the proposed research problem.

This is important that the literature review for conceptual definitions should be analytical not just mention the main title or objectives or findings of the literature. I have remarkably observed that there is a certain level of lack among the PhD students to write this section in an analytical way. Many students just insert the title of the literature with authors’ names and dates. However, this is not the right way for literature review for a quality PhD research. Rather a student should find the limitations and knowledge gaps of these limitations in relation to his/her proposed study. Many students use a table and insert a number of literatures in this table. This is not justifiable. This is also important debate how many literatures a student should include in this sub-section. Again, there is no clear-cut statement about this number. I would suggest that a PhD proposal should have to include 25-30 mostly related and contemporary literature. The mostly preferred literature should be published in the peer review journals which have good impact factors. The books and reports are also considered, but should be published from the reputed and well known publishers.

The second sub-section should discuss 1 or 2 theories, which is/are mostly relevant and cover the main research question or main aspects of the proposed research. This is important that a PhD student should discuss the contents of the theory/approach/model briefly, and importantly marked out which part of the particular theory is mostly related with the proposed research. This is also important that a student should cite all major research or studies, where this particular theory has been used and in what context. This section can be discussed not more than two paragraphs. At the end of this section, a proposal should find some solid areas where there is still knowledge gap and therefore, this proposed

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research will attempt to fulfil this knowledge gap. Here, the student should further place his/her own research objective and research question, so that it should be visible to the readers that there should be needed to conduct such study.

There are different techniques to search the literature according to the requirement of the proposed research. The most important technique is 'keywords' searching through internet. There are different internet search engines. The mostly accepted search machines are the Social Science Citation Index ([http://mjl.clarivate.com/scope/scope\\_ssci/](http://mjl.clarivate.com/scope/scope_ssci/)) and Scopus Elsevier (<https://www.elsevier.com/solutions/scopus>). In many reputed universities, there are self-search engines which are very suitable to get required literature. The best way is to use different websites of the publishers such as Routledge, Springer, Oxford University Press, Cambridge University Press, Emerald, Nature, Sage, Elsevier, etc. These publishers have advance search engines which are very helpful to get their publications. Some of these publishers' web address are as follows:

- **Routledge:** <http://www.tandfonline.com/>
- **Emerald:** <http://www.emeraldgrouppublishing.com/>
- **Elsevier:** <https://www.elsevier.com/>
- **Springer:** <http://link.springer.com/>
- **Sage:** <http://online.sagepub.com/>

## **Methodology**

Write step by step: i) location of the study, ii) main research approach (qualitative), iii) main research method(s) (survey, case study, or ethnographic), iv) data collection methods, v) sampling and respondents' profile, vi) data collections instruments, vii) data analysis techniques: reliability and validity.

Methodology is the most important part/step in a research proposal. A PhD student should clearly write this section. There are some important aspects in methodology that should be properly mentioned in the proposal. This is also important that each sub-section of this section should come one by one. The rationality of each section with proper justification is crucial rather than just simply mention those sub-sections. Many PhD students write this section/step in theoretical manner with many references. I would suggest to write this section from practical point of view. It means that a PhD student will write this section in the light of his/her own PhD work. I have seen that many students used a lot of references and discussed the advantages and disadvantages of the research and data collection methods. In many cases the students use the authors' names as a subject. This practice is completely wrong for this section. A PhD student can insert some references, but the author(s) should not be mentioned as a subject. A student will write or mention the points as they require and if it is compared with any statement, s/ he can put the citation at the end of the sentence. The following steps should be considered to write a good methodology:

1. **Location of the Study:** This is important to provide a brief discussion about the location of the study. In this case, a student should mention the particular community where his/her research will be conducted. It can be a village, upazila (thana), district, and region. In some research, if it is needed to provide a map of the particular location. This location is important so that a reader can understand about this that can interrelate the findings. For example, if a research location is in particular char land area, the finding would be based on this area and a reader can understand that

this is applicable in the char land people. In many cases, this location indicates particular group of people, their socio-economic, cultural and religion condition. For example, if any research is conducted in the Chittagong Hill Tracts in Bangladesh, it will locate that this study is conducted among the ethnic groups.

2. **Main Research Approach:** This is vital that a particular proposal should be followed in a particular research approach. A research can be either quantitative, or qualitative or mixed method approach. In fact, this identity locates the particular research proposal to a particular group. However, the next step of the research initiative depends on the nature of research.
3. **Main Research Method(s) and Data Collection Methods:** In qualitative research, a number of research methods are employed such as social survey, case study, ethnographic method, documentation survey, etc. The data collection methods such as interview, in-depth case study, FGDs, KIIs, observation, community mapping, and discourse analysis. A PhD qualitative proposal can be employed any of these methods or can apply one more methods. Which method(s) will be used that fully depend(s) on the research objective? This is true that in each method, there are some disadvantages. However, sometime one more methods are suggested. This is also important that a research objectives is important consideration to determine which method(s) will be used. However, a student needs to think which method(s) will be employed to collect sufficient data to fulfil the research objectives. I have observed that many students have the tendency/motivation to use the type(s) of data collection method(s) what they like or feel comfort to use. This is totally wrong idea. This is also important that a PhD student should provide justification why s/he will propose to use this/these research/data collection method(s).
4. **Sampling and Respondents' Profile:** A PhD student should clearly mention the sampling and respondents' profile. In qualitative research, in most cases, 'purposive sampling' is mostly used. There is a debate whether 'probability' sampling can be used in qualitative research. This is interesting as well as important that both sampling procedures can be used in the qualitative research. It depends on two important aspects. First is whether the respondents are properly identified such as respondents' household numbers, ID card, registration, membership, etc. Another one is the number of respondents who are going to be included for a particular research. If a researcher only wants to see the detailed information as a part of case study, then s/he can identify one or two cases or sometime several cases from a greater sampling based on purposive sampling. Here, the cases are selected based on a researcher's personal judgement and experience. But still it is a big debate about the number of sample size in qualitative research. Many experts mention that total sample size would be in any number between 200 and 400, but it is a wrong concept. Again, it depends on the time, resources, researcher's capacity and data management. It is true that a qualitative researcher can take a single respondent, or two respondents or several respondents or even 50 respondents or several hundred respondents if s/he conducts any survey with an institution, or village or community under a case study method.
5. **The Respondents' Profile:** The proposal should mention the respondents' demographic and socio-economic information such as age, family structure, ethnicity, religion, occupation, education, income, etc. This information is helpful to the readers to understand the implication of the particular findings.
6. **Data Collection Instruments:** This is a sensitive part of the methodology. It should clearly mention the types of data collection instruments that are going to be used for each method and respondent. In a qualitative study, there are two main data collection instruments that are used, such as guideline

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and checklist. Data collection instruments, types of methods, and types of data collection methods are provided in Table 1.

7. **Data Analysis Technique(s) - Reliability and Validity:** Data analysis techniques and its reliability and validity is very sensitive and significant sub-section of methodology. These issues are more challenging and difficult task in qualitative research. This can be manual and computer assisted. A number of manual data analysis techniques are used that need to be mentioned in this sub-section. Triangulation is one of the techniques that combines multiple observers, theories, methods, and empirical materials, so that a researcher can overcome the weakness or intrinsic biases, and the problems that come from single-method. It helps to obtain confirmation of findings through convergence of different perspectives. Other two popular data analysis techniques are thematic and descriptive approaches. Both are used to illustrate and describe the qualitative data. NVivo is mostly popular and widely used computer assisted data analysis techniques.

Table 1.

Types of Data Collection Instruments	Research Methods	Data Collection Methods
Semi-structured Interview schedule	Social survey	Face – to – face interview
Guideline	Case study	In-depth case study/In-depth case interview Focus group discussions (FGDs) Key informant interviews (KIIs)
Checklist	Social survey Case study Ethnographic Documentation survey	Observation Community mapping Discourse analysis (DA) Documentation survey

## Ethical Consideration

- Clarify which ethical body approves the research
- Contents of ethics
- Consent form
- Justify why this ethical guideline is important

The ethical consideration is a very important part of methodology section. This is important because a qualitative research looks at the human behaviour, human norms and culture, human rights issue, child and women issues. All of these are related to the matters of privacy and confidentiality. The confidentiality and reliability of data, data protection and privacy are important part. Many social aspects such as divorce, disability, women and child rights, corruption, etc. are related with these confidentiality and privacy. However, the particular research should be approved by an ethical body/committee so that these issues are resolved through an intuitional arrangement. Many publishers do not accept the submission of the research findings without this ethical approval. Not only that many institutions do not permit to conduct a research without this approval. From respondents' perspective, they may not give their opinions if this research is not approved by an ethical body. Every respondent wants to be sure from an authorized institution/committee rather than from an individual researcher about their privacy and confidentiality. There is also the matter of 'withdrawal' of data that the respondents provided.

In general, every research institution/university has an ethical board or committee who approves the research proposal before data collection. Some countries have ethical board either from an association or ministry. If a PhD research conducts to an orphanage it needs to get approval from the Ministry of Social Welfare or the Council of Social Sciences, etc.

There are three important tasks that a PhD student should do in this ethical matter. First, s/he should take approval from an ethical committee/board. Secondly, s/he should make prior contact with the respondents /service providers that the researcher will conduct his/her research with the particular group of respondents. Here, the permission from the local institution or authority is also important. Thirdly, s/he will take signature in the consent form from each respondent. In some cases, if the respondents are uneducated, researchers need respondents' verbal consent. Prior data collection, a researcher will explain the research objective clearly to the participants so that they can get clear understand about their benefits of participation.

## Philosophical Foundation

- Epistemology

A qualitative research underpins the epistemology. In every qualitative researcher should explore the knowledge paradigm from this epistemological point of view in order to justify the truthfulness of his/her knowledge. According to Becker (1996), "Epistemology is the theory of knowledge, the philosophical study of the nature, origin, and scope of knowledge. Classical and contemporary epistemologists have debated 1) what knowledge consists in (e.g., justified true belief); 2) what knowledge is based on (e.g., sensory experience and/or pure reason); and 3) what the extent of our knowledge is (e.g., objective, conceiver-independent facts as well as subjective, conceiver-dependent facts)". Moser (2010) states: "It is rhetorically unavoidable, discussing epistemological questions in social science, to compare "qualitative" and "ethnographic" methods with those which are "quantitative" and "survey": to compare, imaginatively, a field study conducted in a community or organization with a survey of that same community or organization undertaken with questionnaires, self-administered or put to people by interviewers who see them once, armed with a printed form to be filled out". De Gialdino (2009) explains the justification to use epistemology in qualitative research. He said that social sciences require that particular epistemological reflections are approached from characteristic theoretical developments and empirical research practice. The notion of paradigm, generated as a consequence of observing the development of a given area of knowledge (Kuhn, 1971), is not applicable to other areas. The answers to questions arising from epistemological reflection in the context of a given science do not constitute the kind of *a priori* knowledge scientific research employs in the remaining sciences. These questions result from the knowledge heritage of each discipline in relation to daily research practice.

## Significance of the Study

- Locate some aspects or problems of the country/area
- Find the relevancy with a country's policy/planning/programmes

This section justifies the significance of the research. Every research signifies the statement of the problem and justifies the purpose in the particular community or country or it locates a significant

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social problem. Every research has relevancy with a country's current/existing policy, planning and programme. However, the finding of the research will provide a solid input to formulate a new policy, or modify the current policy.

### **Scope of the Research**

- Identify the main areas/aspects/concepts of the proposed study
- Targeted problems, population and community/location
- Involving institutions/agencies and stakeholders

The scope of the study such as the areas/aspects of the study. It includes the location of the study, the main stakeholders, and the particular region the organizations or agencies are involved. For example, one research title is 'public health services for foreign migrant workers in Malaysia', the scope of the study will be:

- The broader field of this study is migrant workers
- This study is on Asian migrant workers
- This research covers one of the basic rights: public health access in Malaysia
- It looks the public health access of the foreign migrant workers who are currently working in Malaysia
- This research will collect data from the migrant workers who are working and living in the Klang Valley area in Kuala Lumpur city

The research will select the foreign migrant workers from two public hospitals from the Klang Valley area who took hospital services.

### **Work Schedule**

- A tentative time plan
- A gantt chart with all main task

A tentative work schedule is a requirement in every PhD proposal. Usually, a gantt chart is mostly preferred, where the student will provide all tasks that s/he will do in his/her PhD period. Broadly, there are three main tasks that should be completed during his/her PhD period such as proposal defense, fieldwork and data collection and report writing. Table 2 provides the detail work schedule.

### **References**

- Alphabetical reference list
- APA style

The reference is another crucial part of a PhD proposal. This is important to justify the validity and reliability of the sources of a proposal that a PhD student will write. In many cases, there is requirement to use the literatures which are reliable, peer review, and published from reputed publisher. There are



many reasons to look this section carefully by a supervisor, but three reasons are very important. First, a supervisor wants to be sure whether his/her students used authentic and relevant information or the student has touched the main literatures on the proposed area. Secondly, the supervisor wants to justify the rationality of the research objectives. Thirdly, to forecast the proposed research findings with the previous findings.

*Table 2.*

Task	Year 2016			Year 2017			Year 2018		
	J -A	M-A	S -D	J -A	M-A	S -D	J -A	M-A	S -D
<b>Task 1: Proposal defense</b>									
Desk study and Gantt chart for work schedule									
Selection of title, research objectives and research questions									
Literature review: Concepts and theory									
Completion of course work									
Development of methodology									
Proposal Defense									
<b>Task 2: Fieldwork and data collection</b>									
Development of data collection instruments Field setting and field contact									
Conducting pilot survey									
Data collection									
Data translation									
Data editing and coding									
Presenting paper in a national conference									
<b>Task 3: Report writing</b>									
Data analysis plan									
Adding recent literature									
Results									
Discussion									
Policy implications									
Submission of journal publication									
<b>Task 4: Compile report and submission</b>									
Finalization of report									
Report submission									
Final defense									

This is important that the student should follow the alphabetical order to write this end references. There are many styles and formats for this end referencing but most preferred and used format is APA 6<sup>th</sup> edition. Different style can be downloaded from the following websites:

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- **APA Format 6<sup>th</sup> Edition:** <http://web.calstatela.edu/library/guides/3apa.pdf>
- **Harvard Style:** <https://library.leeds.ac.uk/skills-referencing-harvard>
- **American Sociological Association (ASA):** [http://www.asanet.org/documents/teaching/pdfs/Quick\\_Tips\\_for\\_ASA\\_Style.pdf](http://www.asanet.org/documents/teaching/pdfs/Quick_Tips_for_ASA_Style.pdf)
- **Chicago Style:** [http://www.chicagomanualofstyle.org/tools\\_citationguide.html](http://www.chicagomanualofstyle.org/tools_citationguide.html)
- **Vancouver Style:** [http://library.vcc.ca/downloads/VCC\\_VancouverStyleGuide.pdf](http://library.vcc.ca/downloads/VCC_VancouverStyleGuide.pdf)

Table 3. Some Essential Tips to Prepare a Qualitative Research Proposal

Elements of Research Proposal	Tips
Title	<ul style="list-style-type: none"> <li>● Do not be too much ambitious about the subject matter of your study</li> <li>● Think a specific topic that you know well</li> <li>● Search this topic whether it has already been done</li> </ul>
Statement of the problem	<ul style="list-style-type: none"> <li>● Amplify your topic from your own idea</li> <li>● Take help from literature how your topic has been extended with other concepts/topics</li> <li>● Ask your friends/colleagues/fellows what they think about your topic</li> <li>● Compare its' context with local/national/international issues</li> </ul>
Objectives and questions	<ul style="list-style-type: none"> <li>● Think what you want to investigate in your study</li> <li>● You are not only looking 'what'</li> <li>● You are also looking 'why'</li> <li>● You are further looking 'how'</li> </ul>
Literature review: Concepts and theories	<ul style="list-style-type: none"> <li>● Find out the main concepts in your topic</li> <li>● Be careful that one or two concepts may be implied in your research title</li> <li>● Write all concepts' general meanings, then dictionary meanings, then meanings in the literature, and finally, provide operational definitions (what you mean the concepts in your study)</li> <li>● Find one/two theories/models/approaches that is/are related with your concepts/findings</li> <li>● Think some global feature, then your continent, then country and finally in your local context</li> <li>● Description should be analytical and your arguments should be inserted</li> <li>● Clearly find some knowledge gap/s in your consulted literatures that your study findings will refill</li> </ul>
Methodology	<ul style="list-style-type: none"> <li>● Think, this is mostly important part of your proposal</li> <li>● Write this section step by step as instructed</li> <li>● Take attention, you should write this section from practical point of view</li> <li>● Be careful, the selection of population and sample is purposive but you should give its justification</li> <li>● Write the challenges and limitations that you faced to conduct your study</li> </ul>
Ethical consideration	<ul style="list-style-type: none"> <li>● Be honest, punctual and disciplined to conduct your study</li> <li>● Be sure that only an honest man can do an effective research</li> <li>● Never manipulate anything else in your study</li> <li>● Be neutral and prejudice free throughout your study</li> </ul>
Philosophical foundation	<ul style="list-style-type: none"> <li>● Rationalize your research knowledge developments and empirical research practice</li> <li>● Never challenge its evidence as it is more contextual and individual</li> <li>● This knowledge will be elevated from people/individual's daily practice and experiences.</li> </ul>
Significance of the study	<ul style="list-style-type: none"> <li>● Ask yourself why are you doing this study</li> <li>● Find how your study population can be benefited by your study</li> <li>● Find the national plans, policies, programmes and laws that cover your study findings</li> <li>● Find the international plans, policies, programmes, conventions and laws that cover your study findings</li> <li>● Remember, if you can relate your study with such national and international documents, the significance of your study will be increased</li> </ul>
Scope of the study	<ul style="list-style-type: none"> <li>● Find out all aspects in your study</li> <li>● Fin out broader to narrower of your topic</li> </ul>
Work schedule	<ul style="list-style-type: none"> <li>● Keep timeline from your idea to report submission schedule</li> </ul>
References	<ul style="list-style-type: none"> <li>● Follow a specific reference rule that is followed by your institution/funding authority</li> <li>● Check the reference rule that follows your institution where you are doing you study or submit your proposal</li> </ul>

## CONCLUSION

Writing a qualitative research proposal is a big challenge and difficult task, though it is essential duty to a PhD student. Without designing a proposal, it is almost impossible to carry on such a complex and difficult project, where a lot time, resources and motivation are involved. To 'select a good title to make a reference list' is a continuous process, where a PhD student formulates all tasks effectively and efficiently, and cautiously imparts new ideas and thoughts towards a successful research.

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# Chapter 28

## The Types of Case Studies in Research and Career- Based Endeavors

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### **ABSTRACT**

*This chapter focuses on the overarching components of the case study methodology in the context of research and career-based teaching and organizational learning settings. More specifically, this chapter, presented in several distinct sections, provides a description of the various types of case studies that can be selected for research purposes as well as for use as a teaching tool for career professionals, higher education faculty, and others interested in employing this type methodology. This chapter is intended to serve as a foundation to the subsequent text in this book pertaining to the detailed descriptions and elements of the case study serving as either a research design or a function of the teaching and learning process in academic and career-based settings. Providing a rich initial presentation of the types and qualities of the case study research design, this chapter will launch additional structure for the later chapters to offer a deeper understanding for the reader.*

### **INTRODUCTION**

A case study is a teaching and research method in which the author investigates a specific situation or problem in a real-world context. Case study research is one of many types of investigative, narrative designs available to researchers when seeking to explore a topic across a variety of disciplines. Beneficial to those in science, sociology, psychology, medicine, and education, and having a working knowledge of the purpose, benefits, and potential limitations, the case study can be a viable solution to obtaining answers to a research or career-based inquiry. While there are a variety of different types of case stud-

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ies, understanding the outcomes and the type of descriptive information that can be derived from this method of study is essential to a researcher's success.

This chapter will explore the different types of case studies that are available to researchers whether in a scholarly context or that of a career-based learning environment. Yielding new theory, testing theory or ideas, and confirming existing theory all within the real-life context builds reliable and trustworthy results, which will also be revealed. Graphs and charts will be included in this chapter to increase application and to use as a quick reference of this complex yet popular method of inquiry.

### **BACKGROUND**

A case study is comprehensive analysis of an event, program, group, or other defined topic of interest (McMillan, 2012). The case study is designed to bring the researcher to a deeper understanding through either initial investigation or ongoing research, which adds depth to what is already known about a phenomenon to be examined. The practice of the case study methodology is most often associated as a category of qualitative research. Case studies can also be accomplished with quantitative methods. While the case study can be either qualitative or quantitative, the use of the case study most often is that of qualitative design (Yazan, 2015).

Case study research refers to an in-depth investigation of the identified topic and provides for a detailed description of behavior or experiences from multiple perspectives (Bloomberg & Volpe, 2019). When using the case study design, the researcher seeks to explore and provide a clear depiction of the bounded system using a multitude of types of data. The goal is to investigate an existing problem and address it through the various types of data collected, making sense of the issue examined. There is an abundance of detail in the data that is inherent in a case study with the researcher ending with lessons learned or questions for application to similar cases in research and career training settings.

A review of the literature yields many types and defining features of the case study methodology. The case study research process is characterized by the identification of a real-life case that is usually current in time that will be explained and analyzed by the data collected. One significant characteristic of this methodology is that the data collection process must be exhaustive (Yazan, 2015). It is necessary for the researcher to rely upon many types of data in order to deeply investigate the issue being examined. This data collection process can include interviews, observations, document reviews, and the consideration of other artifacts (Yin, 2009).

Creswell (1998) provided the following definition, "A case study is an exploration of a 'bounded system' or a case (or multiple cases) over time through detailed, in-depth data collection involving multiple sources of information rich in context (p. 61)." The boundaries of the case in this sense are considered to be time and space (geographical location) and in order to thoroughly examine, multiple data sets must be collected and analyzed. The parameters for bounding a case study are the specific place where the case is located and timeframe in which the case is studied (Creswell, 1998). This method of inquiry, however, is diverse in definition, design, and theoretical traditions (Patton, 2015) providing some leverage to the researcher in these processes.

## **MAIN FOCUS OF THE PAPER**

### **Issues, Controversies, Problems**

Case studies are often used to research significant events such as the discovery of a new method of teaching, medical procedure, political changes, or leadership training as examples. The reflective practice techniques from which can be gleaned can be useful to the research process, yet more specifically, to the use of cases for the in-depth exploration and critical analysis of incidents in the field being studied (Shapiro & Stefkovich, 2011). Case studies can also be used to understand a common or everyday phenomenon, which is grounded in the theoretical framework. Case studies, nevertheless, have been associated with some unusually successful outcomes over the years, whether or not if they originated from significant events (Ragin & Becker, 1992).

In practical terms, case studies can be instrumental to support students, employees, and professionals in their preparation for career-based application of newly acquired content and skills. The use of the case study methodology can actualize professional inquiry in real-world settings such as the classroom, office, business, or other learning environment. In this training context, examples of practical situations or various activities are presented in narrative format, usually following with a series of questions asking the learner to apply newly learned skills in this discipline related situation. Often, case studies in the contextual teaching and learning process are used to facilitate discussion, debate and generalization of the content. According to Creswell (2007), the essence of a case study is to understand the phenomenon through the interpretation of the data.

Over the years, researchers have used the case study research method across a variety of disciplines although it is mainly accessed in the social science field. Researchers have frequently utilized this research method to examine contemporary real-life situations and to provide the basis for the application of ideas. However, methodologists do not have a common assumption that categorically establishes a case study with regard to specific design and agreed-upon data collection procedures and methods of analysis (Patton & Patton, 2015). Thus, case studies are generally used to answer the questions of “how” or “why” in a real-life situation with varying approaches to the study design of the individually selected research problem to be examined. Often, the end result is to provide a hypothesis for future research studies.

There have been a series of criticisms presented by a variety of researchers over the years where there has not always been a consensus on the case study methodology as a viable research design. Design, focus, data collection, and the reporting of findings have multiple approaches with the format and requirements of the published literature frequently varying in opinion as to rigor, credibility, and if case studies are considered a true methodology (Hyett, Kenny, & Dickson-Swift, 2014). As such, there are two major types of qualitative case study methodology as identified primarily by Yin (2014) and Stake (1995), which have contributed to the popularity of this framework. Yin and Stake use varying terms to describe case studies, which point to multiple perspectives on the terms and application of the case study methodology. Both Yin and Stake base their positions on the constructionist paradigm that is based on a premise of a social construction of reality where multiple perspectives, data sets, and descriptions benefit the meaning of the whole. Yin (2002) strictly defines case study as “a contemporary phenomenon within its real-life context, especially when the boundaries between a phenomenon and context are not clear and the researcher has little control over the phenomenon and context” (p. 13). Yin (2018) later classifies case studies as exploratory or descriptive. The case to be examined may be an entity such as

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a small group, an individual person, or an organization, a process, and the experiences to be studied in context within each.

Conversely, Stake (1995) provides a more adjustable approach to this method of study indicating that case study is not considered a methodology but rather a choice of what to be studied or, more simply, a method of inquiry. Stake defines case studies as either intrinsic or instrumental having to do directly with the number of research focus areas or the prevalence of a particular phenomenon. Other proponents of case study methodology identify the case study as a research strategy, an individual methodology, or an intensive inquiry into a current issue (Denzin & Lincoln, 2005; Merriam, 1998). Stake's approach, as to the selection of the topic to be examined, when to collect data, and ways to adjust the study, are processes needed throughout the process of inquiry resulting in a response to the initial questions to be explored (Stake, 2005).

What is similar in the theoretical foundation is that authors maintain that the case study must be an in-depth investigation of the identified issue. It is an extensive approach to researching multiple perspectives of a complex phenomenon. As such, these diverse viewpoints related to the content and rigor of this research methodology yield flexible and creative opportunities for the researcher to initiate their concept of a "case" and to successfully cultivate their idea of inquiry around their own research questions. The researcher must ensure that this method is appropriately aligned with the intended purpose and related research questions (Bloomberg & Volpe, 2019), otherwise the case study will be overly broad with limited meaning and application of the data. With a comprehensive definition of parameters of design, the case study provided a level of flexibility and has the potential to introduce new and unexpected findings during the research process (Mills & Birks, 2014).

With the understanding that there are numerous philosophical underpinnings, design methods, and assumptions, the case study provides a level of creativity to the researcher and is both a process of inquiry and product of the specific inquiry in order to generate understanding of the phenomenon under review. As with the above, it is important to consider their epistemological principles and scholarly requirements when engaging in the use of a case study. Therefore, a detailed analysis of the types of case studies will be explored with foci on how case studies can be implemented in a research setting. Similarly, the application of the case study in the teaching and learning context and how case studies can prepare professionals for career-based experiences will be presented.

## **OVERARCHING COMPONENTS OF THE CASE STUDY METHODOLOGY**

### **Methodological Features**

Some case study approaches are either quantitatively or qualitatively oriented while others encompass both qualitative and quantitative methods. As was previously mentioned, the case study is an in-depth analysis of a bounded system in its natural context (McMillan, 2012). There is some leverage afforded to the researcher in the foundation and design of the case study methodology, which is directly dependent on the bounded case to be studied, and the potential use of the results. Case study enables the researcher the opportunity to design research that is specifically tailored to the inherent and individualized complexity of the research problem, anticipated outcomes, and generalizability of the findings.



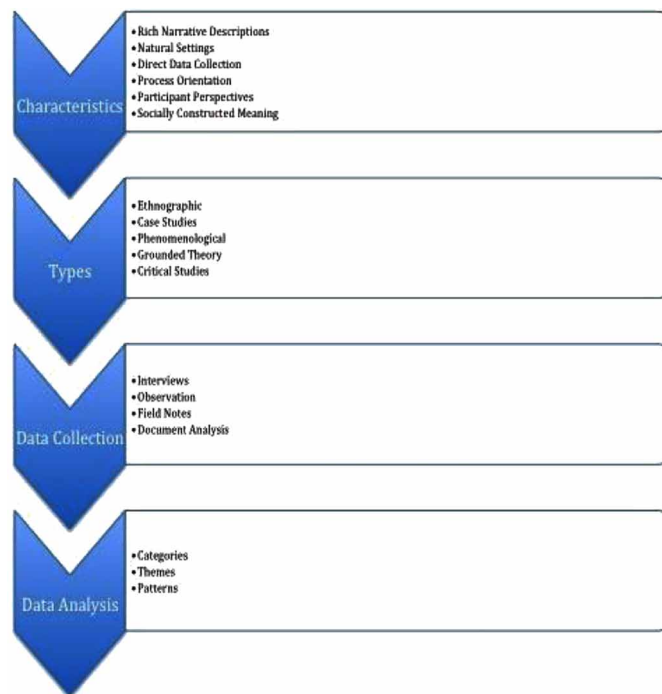
## Qualitative

Case study research is often noted as qualitative inquiry (Creswell, 2014; Yen 2014). Exploratory, explanatory, interpretive, or descriptive methods are all types of qualitative inquiry. Case study, therefore, is grounded in a motivation to explore, seek understanding, and establish the meaning of experiences from the perspective of those involved. Observations, interviews and an analysis of participants' words are often part of the scope of qualitative case study data collection methods.

Some researchers have stated that qualitative research is less "scientific" because the data is based on participant opinions, perceptions, observations and the like, as opposed to statistical relationships within a given set of boundaries (McMillan, 2012), however a quantitative researcher would likely indicate that their research is no less credible. In essence, case study research is used to conduct an in-depth analysis of an issue, in order to understand the issue from the perspective of the participants. (Yin, 2014). More specifically, the researcher seeks to explore, understand and present the participants' perspectives (Creswell, 2014).

The following is a chart depicting some of the salient features of qualitative research methods to include that of the case study methodology. It is important to realize that these features are specific to the philosophical assumptions about how the qualitative studies are conducted that greatly differ from the quantitative assumptions and methods.

*Figure 1. Select features of qualitative research*



The qualitative approach to case study research is in the interaction between the participants and the researcher. The connection between the two is used in order to generate data, which is representative

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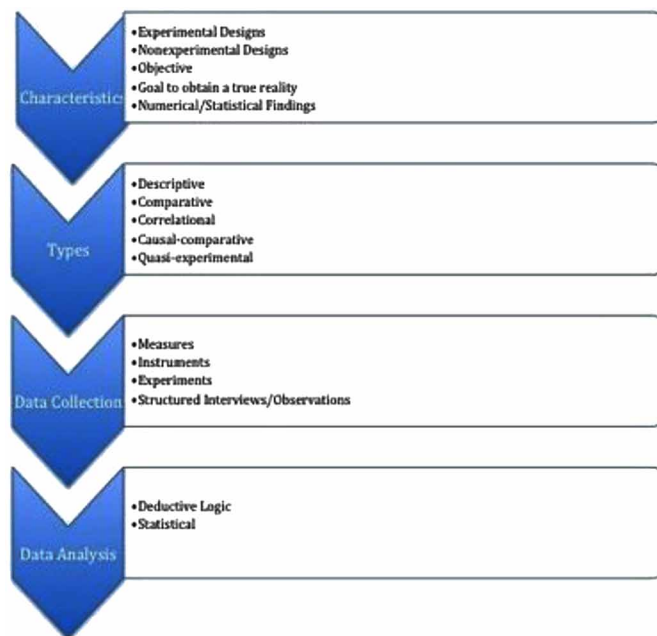
of the researcher's connection to and being immersed in the subject. To facilitate the reporting of the perceptions by the participants, data collection methods used in case studies often include observations, interviews, focus groups, document and/or artifact analysis (Yin, 2014). In qualitative research the results of the study are presented as discussions of trends, patterns and themes as a result of the analysis of the data collected (Patten, 2017). It is important to note, the researcher's perceptions and interpretations become part of the research. Because of this, it is necessary to make sure that there is a subjective and interpretive alignment flow throughout the research (Yin, 2014) to avoid a tendency to corroborate any preconceived ideas or assumptions on the part of the researcher.

## Quantitative

In quantitative research, the hypotheses and research questions are often based on theories that the researcher seeks to test. This is in contrast to qualitative research, where theory is often adjusted or developed throughout the research process in an attempt to link diverse and unrelated facts in a logical way through the triangulation of data and consensus of themes and patterns. Creswell and Poth (2018) note that quantitative case study can be a logical choice for a study that seeks to answer as the method provides a probability sample which can be used to determine the potential to answer to what extent a condition exists or does not exist. For example, while conducting observation data (qualitative), the quantitative case study researcher is focused on the categories or key events and is attentive to background conditions that may influence future analysis. The researcher does not try to interpret relationships along the way (Stake, 1995).

Figure 2 presents some select characteristics of the quantitative design in research.

Figure 2. Select features of quantitative research



The results of quantitative studies are presented in numbers and are often evaluated on the structural design of the information collected (Patten, 2017), whereas, qualitative studies are judged on the applicability and generalizability of the data. As an example, structured questionnaires are one type of instrument used to collect data that are easily reduced to numerical data. Further, measures such as Likert scales and multiple-choice questions produce objective scores that are easily reduced to calculations and measures. Subjectivity in the data collection process is not an option as quantitative researchers strategize their research in detail and follow their plan closely to avoid deviations. This is one reason why a concise, structured and clearly articulated set of research questions is important in quantitative research (McMillan, 2012).

Because “case studies explore real-life events in a natural setting” (Yin, 2004, p. xii), the nature of the quantitative research purpose and the data resulting in strict numerical findings are typically not the most appropriate for generalization to the social science field. Thus, quantitative instruments and the subsequent numerical analyses are not generally selected for case studies, as they do not provide the requisite detail in the data. Often, case studies will be used to collect data on a relatively small number of cases in order to understand what meaning, perceptions, attitudes, and expectations of the participants of the case being examined. For added credibility, the blending of quantitative and qualitative data, a mixed-methods design, can be used in a case study where the study would then benefit from the inherent strengths of each approach (Bamberger, Rugh, & Mabry, 2011; Stake, 2010). The choice of employing a qualitative or quantitative case study is dependent on the researcher’s objectives, type of data to be collected, anticipated outcomes, and individual research questions.

## **Case Study Use in Research**

Yin’s (2014) recommendation that “the case study method is pertinent when your research addresses either a descriptive question (what happened?) or an explanatory question (how or why did something happen?)” (p. 112). In many fields (psychology, education, medicine) case study research is used because of the in-depth, multi-sided approach. Stake (1995) notes that case study is an inquiry and analysis of an issue which is intended to capture the uniqueness of the design and outcomes of the study. The case study often lends itself to a contribution to a socially constructed meaning, shedding light on aspects of human thinking, perspectives, and behavior. The use of case studies in research can demonstrate how different aspects of a person’s life are related to each other.

However, there are limitations in the use of a case study as a research method. Case studies are often only about one person, event, or group. Because of these constraints there can be questions about whether the conclusions drawn from a particular case can apply to another similar entity or situation. The results of the study are often not generalizable and therefore, it is not automatically representative of “similar” instances. Consistent application of a method of reporting and use of implications has not received agreement from researchers (Hyett, Kenny, & Dickson-Swift, 2014). Furthermore, since case studies are mostly based on the analysis of qualitative (i.e. descriptive) data, a significant emphasis is placed on the interpretation of the data the researcher places on the information acquired. Likewise, there could be observer bias and subjective opinions the researcher may inadvertently taint, causing the additional concerns regarding the validity and generalizability of the use of the data.

## **Case Study Use in Career Based Endeavors**

Case studies in the career preparation, higher education, and other training sectors, just like those in the academic arena serve as the foundation to answering the question of “why”. Case studies are often used in exploratory research and can assist in the generation of new ideas and are an important way of illustrating theories. Similarly, case studies can demonstrate how different aspects of a similar phenomenon are interrelated. Pearson, Albon, & Harry (2015) suggest that the use of the case study methodology is useful for individuals and teams conducting various inquiry in multidisciplinary higher education settings. As an example, the institute of higher education or other organization will present case studies to their constituents to facilitate understanding how and why the organization is facing market, progress, or peer challenges.

Whatever the goal, the selection of the proper methodology must be aligned to the research or teaching goals in order for the application and context to be pragmatic. Yin’s (2014) assertion that case study methodology should be considered when the goal is to investigate “how” and “why” questions about contemporary events and multiple layers of perceptions. The use of case study methodology can be beneficial to obtain digestible information to share with other stakeholders in a brief but focused content, with examples and practical application and outcomes. The purpose in the use of case studies in career-based endeavors is to appreciate a focused issue or answer a predetermined question in order to transform practice within a system, organization or other group. Just like case studies in the academic arena, case studies in business, education, or other organizational settings, there are many participant voices from the particular group so ensuring that the context is appropriate for the given goals of the inquiry is essential.

## **TYPES OF CASE STUDIES**

After determining that a researcher will conduct a case study the next step is to determine what type of case study will be conducted. A case study selection will ultimately be decided by the overall purpose of the study. While contemporary researchers may vary in the terms used to describe a case study Yin (2016) and Stake (1995) provide some criteria as to the distinction. Yin (2016) classifies case studies as explanatory, exploratory, or descriptive. Yin also makes a distinction between single, holistic case studies and multiple-case studies. Whereas Stake (1995) quantifies case studies as intrinsic, instrumental, or collective. In addition to identifying the “case” and the specific “type” of case study to be conducted, researchers must consider if they are going to conduct a single case study or a multiple case study in their specific context. Ultimately, the question a researcher must answer is if a better understanding of the phenomenon will provide through conducting a single or multiple case study. The process of emerging context-dependent knowledge to the field or teaching and learning is the center of any type of case study.

Figure 3 provides a very brief definition of different types of case studies, which are discussed in more detail below.

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Figure 3. Matrix of types of case studies

Explanatory	Seeks an answer to a question to explain the presumed causal links in a real-life intervention (Yin, 2003)
Exploratory	Explores situations in which the intervention being evaluated has no clear, single set of outcomes (Yin, 2003).
Critical Instance	Explores a specific event or situation, focusing on one or very few sites (Yin, 2003).
Descriptive	Describes an intervention or phenomenon and the real-life context in which it occurred (Yin, 2003)
Cumulative	Makes generalized conclusions from several instances of a situation (Bernard, 2012).
Multiple-case	Enables a researcher to predict similar results across multiple cases sites, contrasting results based on an established theory (Yin, 2003)
Narrative	Describes the story of a real-life problem or situation is told so that it provides sufficient background data in order for the problem to be analyzed and solved (Yin, 2003).
Illustrative	Describes one or two instances of an event. Introduces the reader to a concept and provide a common language about the topic (Stake, 2005).
Intrinsic	Refers to the study of a case (e.g., person, specific group, occupation, department, organization) where the case itself is of primary interest in the exploration (Stake, 1995).
Instrumental	Insight into an issue or the refining of a theory. In this instance the case is secondary and is in a supportive role to help, facilitate and understand of

### **Explanatory Case Study**

Explanatory case study design is useful for discovering how events occur and to explain how the events influence particular outcomes relevant to the case. More specifically, explanatory case studies, which can be single or multiple cases, are utilized to explore any phenomenon in which questions such as “does” and “if so, how often” are used to investigate the case (Yin, 2009). Explanatory research investigates a case when the intervention under examination has no clear set of outcomes (Yin, 2009). This type of case allows the researcher to scrutinize the data closely at both a surface level and a deeper analysis to explain the phenomena derived from the data. This type of study may be used to determine pattern matching in very complex and multivariate cases.

### **Example of Applied Use**

A researcher wants to examine the perceptions of school staff members about a particular management program used in the school and if the methods from the management program are effective or lack effectiveness when managing student behavior. There is no clear outcome, it seeks to explore “does and if so, how” and thus an explanatory case study is chosen as the methodology.

## ***The Types of Case Studies in Research and Career-Based Endeavors***

### **Key Concepts**

- Seeks to explain “how” and “why” a phenomenon occurs.
- Examines a contemporary phenomenon within the field of study.
- The researchers must have no control over the phenomenon (Yin, 2014).

### **Exploratory Case Study**

Exploratory design is often used to review a problem that has not yet been studied in order to define operational definitions. This approach uses secondary research and informal qualitative research techniques such as discussions with participants and is employed to answer the questions of “how often” and “how many.” Exploratory research can be referred to as a grounded theory approach to interpretive or qualitative research because it is often a way to answer theory from the data rather than from a hypothesis (Stake, 1995; Yin, 2003). Exploratory research can also be referred to as applied research.

### **Example of Applied Use**

A researcher wants to investigate the effects of mandated state testing on student performance and how the interruption in students’ schedules may affect their retention of key concepts from a month-long unit of learning. The researcher is seeking to answer a theory (that state testing disrupts student retention) and uses data from previous and post state testing to answer the theory.

### **Key Concepts**

- Takes place when a problem is in the early stage (i.e. topic is new to the field).
- Addresses research questions of what, why and how (Yin, 2014).

### **Critical Instance**

In the critical instance approach the focus is on a specific event or situation to thoroughly investigate rather than to generalize. It is an examination of one or more situations in order to criticize a generalized or universal contemporary assumption. This method is often used in cause and effect situation. More specifically, this type of case study provides answers to questions about universal associations through a detailed study of a single instance.

The limitations of this type of design is that it cannot be used for generalization as any evidence collected may not be the norm in another instance of a similar site (Yin, 20014). Furthermore, a researcher must be certain about the research goals before conducting study as often critical instance case studies are often requested by a third party (Neale, Thapa, & Boyce, 2006).

### **Example of Applied Use**

A researcher wants to study the relationship between teachers’ core beliefs and their delivery of instruction around special education pull out instruction. Critical instance design allows for researching a complex

instance of situations in classrooms based on a comprehensive understanding obtained through extensive description and analysis in its use or environment.

### Key Concepts

- Strategic importance in relation to the general problem is analyzed.
- Answers a cause and effect research question/s.
- Question or challenges a highly generalized or universal assertion in the field.

### Descriptive Case Study

A descriptive design seeks to answer the “what” question of a study, which is unlike other methods of case study that seek to answer the “how” and “why” (Yin, 2004). A descriptive design method focuses on real world problems and provides essential facts about the case along with introducing the reader to key concepts; policies and can include quantitative data collection. Moreover, it provides an analysis and evaluation of the solution to the problem and often offers alternative solutions to the problem.

### Example of Applied Use

A researcher wants to understand what skills and abilities a church leader needs to demonstrate to be seen by the congregants as having strong leadership qualities. The researcher is seeking to answer the “what” question in relationship to key concepts (church leadership).

### Key Concepts

- Uses a narrative framework focused on real world problem.
- Provides a solution or alternate solution to the problem being studied.

### Cumulative Case Study

Cumulative design includes information from several instances of a situation in order to make generalized conclusions. The data is collected at the sites at different times thus to enable aggregation of data. The idea is that these studies will form a historical timeline and allow for greater generalization and a global examination of the situation.

### Example of Applied Use

A researcher wants to understand the link between Positive Behavioral Support (PBS) and instructional pedagogy. The study will investigate instructors across the district that has extensive experience with the technology focusing on those with at least five cumulative years of experience using PBS. More specifically, the research is investigated how instructors use PBS to meet students’ goals, and also how the technology shaped their instructional methods during implementation. Data collection is taking place over several days and at different locations thus the researcher chose a cumulative case study approach.

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### **Key Concepts**

- Data collection happens at different times and at several locations.
- Undertaken when no single case could provide as much depth or understanding to a topic as examining multiple cases.
- Creates a more compelling story with the use of multiple case stories.

### **Multiple Case Studies**

Multiple case study design provides the researcher with the option of using information from different studies to form a new study. The multiple case study design affords the researcher an opportunity to explore the phenomena under study through conducting a replication strategy. Yin (1994) notes that “replication is carried out in two stages—a *literal replication* stage, cases are selected to obtain similar results, and a *theoretical replication* stage, cases are selected to confirm or disprove the patterns identified in the initial cases. According to this model, if all or most of the cases provide similar results, there is support for a preliminary theory that describes the phenomena sought by the researcher” (p. 45). Yin (1994) goes on to suggest that six to ten cases should be used in the research “...if the results turn out as predicted, [then they] are sufficient to provide compelling support for the initial set of propositions” (p. 46). The ability to uncover new and divergent themes is one of the strengths of multiple case study approach.

### **Example of Applied Use**

A researcher wants to focus a study on one school district. Within that district the researcher would investigate the influences of student achievement (replication stage) and teacher instructional practices in the classroom (theoretical replication stage).

### **Key Concepts**

- Goes beyond the surface level of a situation to focus on the “why” of the participants’ behaviors.
- Themes may emerge from the data collection to uncover options to replicate of study.

### **Narrative Case Study**

A narrative design is used to describe the lives of others, collect and tell stories about individual or groups of people’s lives. This type of case study is often written in narrative form to represent the individual’s experiences. A narrative case study most often focuses on researching a single participant while gathering data through a collection of their stories. There is a reporting of individual experiences, presenting the meaning of those experiences for the participant (Rosiek, 2013).



## Example of Applied Use

A researcher may conduct a study on the topic of why American students chose to study abroad. The narrative case study provides the researcher with a single participant while collecting their experiences, perceptions, ideas, and recollections in order to tell the story about their lived experience.

## Key Concepts

- Findings are presented in a narrative format including a plot and characters
- Typically done on a single participant.

## Illustrative Case Study

Illustrative case study design is used to explain situations. They can provide a basis to apply other solutions to the same situation and to explore and describe an objective or phenomenon. More specifically, this design is used to describe a situation or a phenomenon, what is happening with it, and why it is happening with significant detail. The study should describe every aspect of the case (location, people, organizational goals and so on.) Illustrative case study designs may bridge the gap in the understanding of a topic between the research and the target audience.

## Example of Applied Use

A researcher wants to understand the phenomenon of students who experience both hearing loss and Attention Deficit Hyperactivity Disorder. The researcher is seeking to understand what is happening (hearing loss) and why it is happening (is there a behavioral or other connection with hyperactive disorder).

## Key Concepts

- Utilizes one or two instances of an event to describe a situation.
- Introduces the reader to a concept.
- Provides readers with a common language about the topic.

## Intrinsic Case Study

An intrinsic case study design is the study of a case wherein the subject itself is the primary interest. An intrinsic case study design will examine an unfamiliar case in order to help others understand the phenomenon. According to Stake (2010), “[Research for an intrinsic case study] is not undertaken because it illustrates a particular trait or problem, but because, in all its particularity and ordinariness, this case itself is of interest” (p. 437).

## Example of Applied Use

A researcher may study children diagnosed with Post Traumatic Stress Disorder (PTSD). In this intrinsic case study of a child with PTSD, the results may be generalized to help new therapists better under-

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stand what children who see or are involved in a violent experience. An intrinsic case study approach was chosen as results from the study may provide guidelines for helping children overcome traumatic experiences through counseling.

### **Key Concepts**

- The case is the primary interest of the exploration for the study.
- Exploration is the desire to know more about the unique phenomenon.
- Must be able to define the uniqueness of this phenomenon, which distinguishes it from all others.

### **Instrumental Case Study**

An instrumental case study design is the study of a (e.g., person, specific group, occupation, department, organization) to provide insight into a particular issue or to build theory to promote an understanding of the issue. An instrumental case study is often developed to promote an understanding of specific issues that may not be generalizable to other similar entities. “When the purpose of case study is to go beyond the case, we call it ‘instrumental’ case study” (Stake, 2006, p. 26). Instrumental case study designs are chosen when the complexity of what is being studied can be explored in detail rather than surveying a representative sample (Taber, 2014) providing insight into a separate issue or helps to augment a theory

### **Example of Applied Use**

A researcher wants to explore how work relationships enhance or detract sales growth within a paper company. The instrumental case study was selected in order to support a theory to promote a deeper level of the intersection between work relationships and sales growth.

### **Key Concepts**

- Provides the researcher insight into a particular issue, reconsiders generalizations, or builds theory.
- Facilitates understanding of something other than the established case, which is secondary to the inquiry.

### **Interpretive Case Study**

Orlikowski and Baroudi, (1991) note that interpretive designs assume that people create their own meaning as they interact with the world around them, which is consistent with a constructivist theory. The researcher interprets the data by creating conceptual categories either supporting or challenging the assumptions made. (McDonough and McDonough, 1997).

### **Example of Applied Use**

A researcher seeks to understand how first year teachers, from the Teach America program, shape their experiences in their first few months of teaching. In this study, the researcher is seeking to understand

how a common thread (Teach for America program) shapes the experiences of first year teachers (how does the school demographics change their perceptions of teaching?).

### Key Concepts

- Research start from the position that our knowledge of reality is a social construction by human actions.
- The study should center on the lived experience of the human action.

### Critical Instance Case Study

Critical Instance designs are used to examine a specific event or situation. The concentration of the study is on one or very few sites. Because the focus is on a specific event, situation, or behavior it therefore, it is relatively small sample group. This methodology is used to thoroughly investigate a single instance of unique interest rather than generalizing to a larger population.

### Example of Applied Use

For example, a researcher is planning to investigate teachers' self-efficacy and beliefs of their instructional delivery method around testing procedures in special education settings. In this example, a complex instance of situations in classrooms is examined based on a comprehensive understanding obtained through extensive description and analysis.

### Key Concepts

- Provides detailed information on a particular person or group.
- Examines one or more situations in order to criticize a generalized or universal assumption.
- Is used in cause and effect situations.

### Program Implementation Case Study

The program implementation design is just as the name suggests providing the researchers with the ability to identify whether or not a program has been successfully implemented. The Program Implementation Case Study typically involves classifying what difficulties the program faced or is currently facing. These types of studies are most often longitudinal studies that require a large sample, as there is a greater need to generalize the results over a large participant population.

### Example of Applied Use

A researcher wants to know if the new reading program implemented across a district is improving student academic scores as noted in the sanctions placed on the school by the government. In this case, the Program Implementation Case Study design would be selected in order to examine the complex phenomena of the process of implementing the reading program, the strengths of the implementation process, and any other features that would inform this practice within this setting.

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### **Key Concepts**

- Discovers difficulties or successes being faced by a particular program during implementation.
- Provides answers about whether or not the execution of a specific program is considered effective, reasons why or why not, and overall review of the program use.

### **Collective Case Study**

Stake (1995) and Creswell (2007) refer to collective case studies as the study of more than one case in which an instrumental study is the link between the single cases. Using this approach may help the researcher collect data from purposeful participant selection, rather than a statistical representation of sampling as in a quantitative study. The goal is to provide contextual factors that influenced behaviors while exploring causal explanations how aspects affect other parts of the study, rather than showing a relationship or correlation, as in quantitative research (Creswell, 2007). Gall, M. Gall, J. & Borg (2010) note a researcher should use this design when the intention of the research is to provide a better understanding and exploration of the perceptions of the participants.

### **Example of Applied Use**

For example, a study by Gay (2012) was conducted for the purpose of describing what three purposefully selected elementary mathematics teachers who positively affect student achievement in public elementary school know and how they taught math in their classrooms. The link here is that these teachers are effective in teaching mathematics. The inquiry was to inform about their competing ideas are in their delivery of instruction (Gay, 2012).

### **Key Concepts**

- Looking for recurring behaviors or actions in the same or different entities, countries, or cultures.
- Combines multiple cases into a single study (data collection from several sites can be aggregated).

## **SOLUTIONS AND RECOMMENDATIONS**

A case study examines a person, place, event, phenomenon, and so forth in order to generalize key themes and results that help predict future trends, clarify previously hidden issues that can be applied to practice, and/or provide a means for understanding an important research problem with greater clarity. The methods used to study a case can be quantitative, qualitative, or mixed-method.

All research requires the researcher to go develop the initial stages of shaping the problem, purpose and RQ to ensure that there is alignment that is consistent with the methodology chosen for the study and writing a case study is no different. However typically there are some general recommendations for writing a case study

Start with the introduction and thoroughly discuss why the topic is important to investigate, what is known about the topic and what new knowledge may come about from the research. Then do a deep dive into the literature that includes providing context for the problem under investigation and what gaps

may exist in the current literature. Next is the methods section, in this section the researcher explains why a particular subject of analysis to study was used and the strategy. Once the front matter of a case has been thoroughly investigated, the final steps are to collect data on the case study through interviews, focus groups, surveys and so forth. Then to report out on the findings and future research opportunities.

While a case study maybe an effective way to examine a unique phenomenon there are some recommendations on problems to avoid when writing a case study. Do not overgeneralize the results, be careful when drawing conclusions from your case study. Conclusions must be evidence-based and grounded in the results of the study; otherwise, it is merely speculation. A researcher must describe the specific limitations inherent in the subject of analysis. Finally, be thorough in the consideration of all possible outcomes or recommendations derived from the study's findings. If you do not, your reader may question the validity of your analysis, particularly if you failed to document an obvious outcome from your case study research.

## **FUTURE RESEARCH DIRECTION**

Often, the findings from the research will highlight a number of areas that could be explored for future research. Findings that were not anticipated and aspects of your research questions that could not be answered. Case study goes a bit further in that the future research direction often proposes to examine the conceptual framework or test the theoretical model in a new context, location and/or culture. More specifically, the future research section will address the impact that the research might have on future research or policy decisions or implications relevant in the field of interest in the study. Think of a case study research paper as a complete, in-depth narrative about the research problem.

Case studies are often seen as limited in their ability to create new knowledge as participants in the case study are not randomly selected and findings cannot be generalized to larger populations. Flyvbjerg (2006) notes however there are five misunderstandings of case study:

1. General, theoretical, context-independent knowledge is more valuable than concrete, practical (context-dependent) knowledge.
2. One cannot generalize on the basis of an individual case; therefore, the case study cannot contribute to scientific development.
3. The case study is most useful for generating hypotheses; that is, in the first stage of a total research process, whereas other methods are more suitable for hypotheses testing and theory building.
4. The case study contains a bias toward verification, that is, a tendency to confirm the researcher's preconceived notions.
5. It is often difficult to summarize and develop general propositions and theories on the basis of specific case studies (p. 221).
6. While writing a case study, the researcher should think about these misconceptions because to do so can help strengthen the validity and reliability of the research by clarifying issues of case selection, the testing and challenging of existing assumptions, the interpretation of key findings, and the summation of case outcomes.

## CONCLUSION

The case study method can be used for exploratory or theoretical research as it provides a rich context that affords the researcher an opportunity to understand the phenomenon in-depth. Case studies, typically qualitative in nature, can be incorporated for the purpose of conducting complex research on a single situation or multiple groups of individuals in a variety of fields of studies. Providing highly detailed information, case study research presented in the teaching and learning context can also provide opportunities for reflective practice on a designated theme or lesson.

Most cases contain the following elements; (a) a researcher who is exploring a question or problem, (b) a description of the problem (c) supporting qualitative and/or quantitative data (quoted statements or testimony, supporting documents, images, video, and/or audio and so forth) that helps to answer the question or the problem that was being explored (Bernard, 2012). Regardless of the type of case study, data collection method or data analysis method selected, all case studies have advantages and disadvantages. The choice of what type of case study is dependent on the research questions and must be aligned to the author's epistemological principles and scholarly requirements of their work. With the popularity of this design in both research and career-based endeavors, researchers continue to use the case study method, particularly in studies of contemporary, real-life situations.

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## **KEY TERMS AND DEFINITIONS**

- Career-Based Inquiry:** Active learning that starts by posing a question, problem in a professional field.
- Case Study:** A type of research that typically studies a particular person, group or situation.
- Method of Inquiry:** Student centered method of education focused on asking a question.
- Mixed-Method Research:** The mixing of qualitative and quantitative data methods.
- Qualitative Methodology:** Research used to uncover trends, thoughts and opinions.
- Quantitative Methodology:** Research used to measure an observed phenomenon typically through use of statistical analysis.
- Types of Case Studies:** Different types of studies that can be done using the case method.

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## Chapter 29

# The Contribution of Case Study Research in Information Science

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### **ABSTRACT**

*The reputation of case study research has grown as a research strategy for developing theories and as a method for investigating and understanding world complex issues. The purpose of this chapter is to demonstrate how the case study research can add value to a research project. Case study research, although becoming increasingly popular is not adequately utilised in information science research. The chapter draws on the literature on case study research in various fields and uses examples to inform research in information science. Case study research have been used across a number of disciplines, particularly, in the social sciences, education and business to address real world problems. Many researchers tend to use case study research because of the numerous advantages it offers. For instance, the employment of multiple data collection instruments maximises the depth of information, which in turn increases transferability of the findings. Additionally, the use of multiple cases and multiple data collection instruments make generalisation easy and valid. Maximising generalisability of findings is the ultimate goal of research.*

### **INTRODUCTION**

Case study research has undergone substantial methodological development. This evolution has resulted in a pragmatic, flexible research approach capable of providing comprehensive in-depth understanding of a diverse range of issues across a number of disciplines (Harrison, Birks, Franklin & Mills, 2017). Thus, case study designs have been used across a number of disciplines, specifically in the social sciences, education and business to deal with real-world problems. Many researchers tend to use case study research because of the numerous advantages it offers. For instance, case study research can easily be used with other qualitative approaches such as discourse analysis and historical methods in line with

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methodological triangulation (Ngulube, 2015). Case study researchers usually triangulate data as part of their data collection strategy, resulting in a detailed case description (Eisenhardt, 1989; Ridder, 2016; Stake, 2005). The use of triangulation in research makes case study research popular.

The purpose of triangulation is not to arrive at consistencies, as commonly believed (Patton, (2002) quoted in (Ngulube & Ngulube, 2017). In some cases, triangulation may result in inconsistent, contradictory and convergent findings. What is important to note is that inconsistencies may trigger the researcher to explore the phenomenon further in order to make the data sensible. Furthermore, conflicting findings may motivate the researcher to think outside the box (Ngulube & Ngulube, 2017).

Cohen, Manion and Morrison (2007) outline five different types of triangulation:

- Time triangulation employs cross-sectional and longitudinal designs.
- Space triangulation uses comparative or cross-cultural approaches instead of researching one culture.
- Combined levels of triangulation involve more than one level of analysis (individual level, group level and organisational level).
- Theoretical triangulation uses multiple theories to explain research findings.
- Investigator triangulation utilises more than one observer independent of the other.
- Methodological triangulation entails multiple methods.

All these forms of triangulation are possible, for instance, space triangulation which uses comparative or cross-cultural approaches was employed by Cohen, Manion and Morrison (2007) to explore the similarities and differences in student behaviour in the use of four academic libraries in the greater New York City area. However, the most common form is methodological triangulation, which is easily incorporated in case study research. Methodological triangulation can occur if more than two research approaches are used.

However, case study research can mean single or multiple case studies. The use of multiple case studies gives case study research a lot of validity and credibility. This also contributes to its popularity; and, as a result, researchers have confidence in it. It is imperative not to confuse case study research with qualitative research as they can be based on any mix of quantitative and qualitative evidence.

This chapter aims to provide information science researchers and researchers of other disciplines with an account of the benefits of case study research in any given research. Furthermore, the chapter relates a general debate of how different case study research designs contribute to a theory continuum. Hence, the research question: What are the contributions of case study research in information science?

Researchers might not be comfortable with case study research, because it has some level of subjectivity and researcher bias may also be a problem. Furthermore, it is not possible to conduct the research on a large scale because of the in-depth nature of the data. Hence, there are concerns about the reliability, validity and generalisability of the results. However, it is of utmost importance to note that case study research has various advantages in that it presents the data of real-life situations and provides a better understanding of the detailed behaviours of the topics of interest, which cannot be provided by quantitative research. It is necessary to note that case study methods, like all research methods, is more appropriate for some situations than others. It is, therefore, the duty of the researcher to use case study research appropriately to come up with desired results.

Additionally, case study research has its strength in creating theory by expanding constructs and relationships within distinct settings (in single case studies), (Ridder, 2017). On the other hand, case

study research is a means of advancing theories by comparing similarities and differences among cases (in multiple case studies), (Ridder, 2017). Contrary to quantitative logic, the case is chosen because the case is of interest (Stake, 2005); or it is chosen for theoretical reasons (Eisenhardt & Graebner, 2007).

Thus, the objective of this chapter is to highlight various contributions of case study research and to explain how it can be used in theory building. This chapter used desktop research to present the contributions of case study research in information science. Desktop research is very effective because it is extremely quick since it is a research technique which is mainly acquired by sitting at a desk. This type of research uses the secondary sources other researchers have gathered through primary research. The advantage of desktop research is that data are already existing and available and has very low costs. The researcher, however, needs to be information-specific, since there is a lot of information on the internet.

It is not foreign to use secondary data analysis in library and information science research. The same method was employed by Johnson (2015). A secondary data collection method is also an empirical exercise and a systematic method with procedural and evaluative steps, like collecting and evaluating primary data (Johnson 2015). Alenzuela, Fong, Bloss and Chambers (2019) employed the same method to describe the development and current practices in information literacy at the University of the South Pacific. It is essential at this point to give a brief definition of a case study.

## **DEFINING A CASE STUDY**

One of the most prominent advocates of case study research, Yin (2009), defines case study as “an empirical enquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident” (p.14). Stake (2006), on the other hand, notes that as a form of research the case study “is defined by interest in an individual case, not by the methods of inquiry used” and contends that the object of study is a specific, unique and bounded system.

In addition, Hagan (2006) defines a case study method as “in-depth, qualitative studies of one or a few illustrative cases” (p.54). This implies that besides the case under investigation, there are also other cases. Taking this description into consideration, it can be suggested that a case study is an approach capable of examining simple or complex phenomena with units of analysis varying from single individuals to large institutions.

Case study research is normally utilised in medical research, psychology, sociology; and it is now also being adopted in other disciplines (Harrison, Birks, Franklin & Mills, 2017; Lune & Berg, 2017). Information studies have also widely adopted the case study method. However, the choice is guided by the type of questions the researcher will ask when collecting data. In information science, as in other disciplines, case study research is becoming more popular each day (Harrison et al., 2017; Herreid, 2006; Ngulube, 2019; Ngulube & Ukwoma, 2019; Ullaha & Ameen, 2018).

What makes case study research popular is that it is considered by researchers as a robust research method particularly when a holistic, in-depth investigation is required, (Lune & Berg, 2017; Zainal, 2007). Another factor might be that, when employing an exploratory case study, data collection may be conducted before the research questions and hypotheses are proposed (Zainal, 2007). Philosophical assumptions of a case study need to be considered. The following section illustrates the philosophical assumptions of a case study.

## **PHILOSOPHICAL ASSUMPTIONS OF A CASE STUDY**

Case study research has a practical versatility in its agnostic approach whereby “it is not assigned to a fixed ontological, epistemological or methodological position” (Rosenberg & Yates, 2007, p. 447). Philosophically, case study research can be orientated from a realist or positivist perspective where the researcher holds the view that there is one single reality which is independent of the individual and can be apprehended, studied and measured through to a relativist or interpretivist perspective (Harrison et al., 2017). In terms of a relativist or interpretivist perspective, case study research adopts the premises that multiple realities and meanings exist which depend on and are co-created by the researcher (Yin, 2014).

It is therefore imperative for researchers to be “aware of the philosophical assumptions underlying their knowledge claims.” Acknowledgement of knowledge claims helps the researchers to avoid inconsistencies in their research (Ngulube, 2015). Additionally, researchers become ethically accountable for their choices and make the whole research enterprise transparent by declaring their philosophical claims upfront (Ngulube, 2015). Such declarations give context to the researcher’s scholarly work (Lowery & Evans, 2004). Researchers make their presuppositions explicit and demonstrate their awareness of the philosophical assumption in which their research is grounded to justify their methodological choices (Guba & Lincoln, 1994). Being cognisant of philosophical and theoretical assumptions also contextualises the researcher’s scholarly work, (Lowery & Evans, 2004). Researchers should explicitly describe their research methodology and explain the reasons for choosing a specific methodology, since this may provide a widely informed overview of the nature of the craft and promote productive dialogue across a research community (Bachanan & Bryman, 2007, p. 497).

When researchers conduct case study research, the “case” under investigation may be an individual, organisation, event or action existing in a specific time and place. For example, clinical science has produced well-known case studies of individuals and clinical practices (Rolls, 2005; Corkin, 2013). It must be noted that when “case” is used in a claim or an argument, such a case can be the subject of many research methods, not just case study research.

Thus, case study is relevant to all research traditions because it is transparadigmatic and transdisciplinary (Van Wynsberghe & Khan, 2007). The purpose of this chapter is to demonstrate the contributions of case study research to information science. The following section, therefore, describes the suitability of case study research in information science.

## **SUITABILITY OF A CASE STUDY FOR RESEARCH IN INFORMATION SCIENCE**

Social science case studies are often perceived as limited in their ability to create new knowledge because they are not randomly selected and the findings cannot be generalised to larger populations (Flyvbjerg, 2006). Hence, the social scientist researcher needs to think introspectively about how to deal with these misconceptions because this can help to strengthen the validity and reliability of the research. However, it must be noted that there is no research method which is flawless. The researcher should clarify issues of case selection; test and challenge existing assumptions; and interpret key findings and the summation of case outcomes before embarking on any research.

Like any other research method, a case study, cannot be suitable without a thorough literature review, relevant research questions and good research methods, (Aveyard, 2010; Jesson, Matheson & Lacey, 2011). However, just as a different method prevails in the natural sciences, different social science re-

search methods meet different needs and situations for investigating social science topics (Yin, 2009). For instance, for social sciences, like economics case study research, can be suitable for studying the structure of a specific firm or organisation.

In brief “case study method allows investigators to retain the holistic and meaningful characteristics of real-life events, such as individual life-cycles, small group behaviour, organisational relations and managerial processes, neighbourhood change, school performance, international relations, and the maturation of industries” (Yin, 2009, p. 4).

Case studies are mainly used as a research method for the social science disciplines, which include library information science (LIS). Ngulube and Ukwoma (2019) revealed that the case study research method was the second preference of LIS researchers in Nigeria and South Africa. Social scientists need to understand the application of case study research as well as how to design and conduct single or multiple case studies. For instance, in information science a case study can be used to investigate the curricula of an information science programme of the University of Zululand, Kwa-Zulu-Natal and the University of South Africa. Such studies can provide research with a rich foundation to be able to generalise findings on the nature of LIS curricula in South Africa.

The same approach was employed by Ngulube (2019) when investigating the functionality of public school libraries in three schools. The multiple case study was designed as a comparative investigation to show relationships between three schools to determine how functional public high school libraries are. By evaluation, a case study encompasses a problem contextualised around the application of in-depth analysis, interpretation and discussion, which often results in specific recommendations for action or for improving existing conditions.

A case study is not purely qualitative, since the methods used to study a case can rest with a quantitative, qualitative or mixed-method investigative methodology. Most studies or research utilise multiple cases because they enhance the external validity or generalisability of findings. If a single case is used, the phenomenon under investigation must be a unique one. A single case needs an in-depth analysis, which can be based on the hypothesis that the case study will reveal trends or issues that have not been exposed in prior research or will reveal new and important implications for practice. In addition, when focusing on a single case in social science research researchers can make detailed observations of something that cannot be done with large samples at a very low cost.

Recently the case study research approach has been used extensively in a wide variety of disciplines, particularly in the social sciences because of its ability to generate an in-depth, multi-faceted understanding of a complex issue in its real-life context, (Yin, 2009). The researcher employs multiple cases for an even deeper understanding of the phenomenon and comparison purposes. In addition, a case study gives the researcher an opportunity to use a range of tools in one subject which gives a holistic review of a phenomenon unlike surveys which give more of a snapshot. The employment of multiple cases needs the knowledge of case study design.

A case may be chosen because of its inherent interest or because of the circumstances surrounding the case. Apart from this, researchers may choose case study because of their in-depth local knowledge; which puts them in a position to have a good understanding of the phenomenon (Fenno, 2014). Thomas (2011) proposes a typology for the case study where the purposes are identified first (evaluative or exploratory); in addition, the approaches are delineated (theory-testing, theory-building or illustrative) and decided on with a principal choice to be made whether the study would be single or multiple; and choices are then exercised as to whether the study should be retrospective, snapshot or diachronic; and whether it is nested, parallel or sequential. It is necessary therefore to look at case study designs.

## **CASE STUDY DESIGN**

Case study research can be categorised into a number of case study designs. There are four main types of case study research: single case (holistic) designs, single case (embedded) designs, multiple case (holistic) designs and multiple case (embedded) designs, (Yin, 2014). Case study designs can be descriptive, exploratory, explanatory, illustrative or evaluative, (Harrison et al., 2017). Descriptive research is to provide an accurate and valid representation of the factors relevant to the research question; while exploratory research focuses on identifying the boundaries of the environment in which the problem resides. Explanatory research, on the other hand, identifies any causal links among variables pertaining to the research problem. This also includes, particularistic, heuristic, descriptive (Merriam, 2009) and intrinsic, instrumental and collective research (Stake, 2006). According to, Shodhganga, (n.d.), explanatory studies go beyond description and attempt to explain the reasons for the phenomenon that the descriptive study only observed. Shodhganga (n.d.) goes on to say that in an explanatory study the researcher uses theories or hypotheses to represent the forces that caused a certain phenomenon to occur. The next section explains a single case study.

### **A Single Case Study**

It is of paramount importance to take a decision on what type of a case study one is going to employ prior to data collection. When choosing a single case study, the case should be related to theory or theoretical propositions. The single case study can be used to determine whether the propositions are correct or whether some alternative set of explanations might be relevant (Yin, 2014). A single case study can be of great importance when used to test a theory; or when the researcher focuses on any single phenomenon, such as in clinical psychology where the focus can be on one specific patient. A second rationale for a single case study is where the case study represents an extreme case or an unusual case, deviating from theoretical norms or even everyday occurrences (Yin, 2014, p.52). A single case study can also be used as a pilot case, especially at the early stages of a multiple case study research. A single case study is two-faceted; it can be holistic or embedded. An embedded case study entails a study of an organisation with all its various departments. An embedded case study assists in adding the subunits, which in turn add validity and reliability to the study. Yin (2014) maintains that the single case study is eminently justifiable under certain conditions, where the case represents:

- A critical test of existing theory
- An extremely or unusual circumstance
- A common case or where the case serves as a revelatory or longitudinal purpose

As Gerring (2004, p. 342) is of the opinion that a case study should be “an intensive study of a single unit... a spatially bounded phenomenon – e.g. a nation-state, revolution, political party, election, or person – observed at a single point in time or over some delimited period of time”. However, it is important to note that whereas Gerring (2004) refers to a single unit of analysis, it can also refer to sub-units. This is what Yin (2009) refers to as a ‘holistic’ case design with a single unit of analysis and an ‘embedded’ case design with multiple units of analysis.

When conducting research using case study research, researchers should define the unit of study as well as an operational definition. The research conducted as a single case cannot usually be satisfied by multiple cases (Yin, 2014, p. 57). It must be noted that issues of ontology, epistemology and methodology are central to the principles of single-case study research. What are multiple cases then all about? This is explained in the next section.

## **Multiple Cases**

Research conducted through multiple-case study is usually planned in the way one plans for multiple experiments. The individual cases in a multiple-case design may be either holistic or embedded; and each case may include the collection and analysis of quantitative data, which include the use of surveys in each case study (Yin, 2014). This is relevant in any field of study, especially when the researcher wants to apply a mixed-methods approach. However, the researcher should choose these cases carefully, since they are expensive and time-consuming to conduct. Apart from this, a multiple case study also requires expensive resources and the researcher who chooses a multiple case study must be really committed.

Although expensive and time-consuming, multiple cases are often considered more compelling and the overall study is therefore regarded as robust (Ledford & Gast, 2018, Herriott & Firestone, 1983; Yin, 2012). Furthermore, multiple cases allow for a wide pull of data and make generalisation much easier than data gathered from a single case. Multiple cases also allow the use of a replication strategy. Both single cases and multiple cases fit well in the qualitative research approach. Denzin and Lincoln (2011, pp. 8-10) summarise the characteristics of qualitative research as five key attributes:

- Reducing the use of positivist or post positivist perspectives
- Accepting postmodern sensibilities
- Capturing the individual's point of view
- Examining the constraints of everyday life
- Securing rich descriptions

The attributes mentioned above are commonly exemplified in case study research (Harrison et al., 2017). Apart from the case study, research can be used in a variety of ways. In agreement, Yin (2003) alludes that there are several designs for case studies ranging from exploratory and explanatory to descriptive case studies. The following section illustrates the exploratory case study.

## **Exploratory Case Studies**

When conducting exploratory case study research, the researcher starts with data collection. This can be done before the research question is formulated. Yin (2003) indicates that the goal of exploratory studies is to discover theory through directly observing some social phenomenon in its natural setting and raw form. In this instance, case study research is useful as a pilot study, for example when planning a larger comprehensive investigation (Swanson & Holton, 2005) cited in Lune and Berg (2017). Furthermore, exploratory case studies are set to explore any phenomenon, which serves as a point of interest to the researcher. In this instance, the phenomenon under investigation needs to be described. Moreover, when the researcher investigates information science programmes at the three institutions mentioned in the previous section, he or she needs to do a comparative analysis of the programmes.

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The most important thing to bear in mind when conducting research is to utilise a research method that is more advantageous than others. In this specific example case study research is appropriate because it allows the researcher to engage a number of data collection instruments. In a nutshell, exploratory case study can be designed quickly in response to unanticipated events. In addition, case study research allows for the exploration and understanding of complex issues through reports of past studies, (Zaidah, 2007). According to Yin, (1984) an exploratory case study is crucial in determining the protocol that will be used. Case study research can also be explanatory. The following section illustrates the explanatory case study research.

### **An Explanatory Case Study**

Explanatory case studies examine the data closely at surface level and in-depth to explain the phenomena under investigation (Zaidah, 2007). An explanatory case study is useful when working on theory development, especially when conducting causal studies and when something new has happened. A theoretical model can then be built to explain the phenomenon. This then allows for a comparative analysis with other cases which would have occurred; and share the same feature. Lune and Berg (2017) add that case studies are essential when pursuing an inferential research question, particularly in complex studies of organisations or communities where one might desire to employ multivariate cases to examine a plurality of influences. The explanatory case study then attempts to discover and analyse the many factors and conditions that can help the researcher to build a casual explanation for the case, (Lune & Berg, 2017). The other case study design is referred to as a descriptive case study.

### **Descriptive Case Study**

When this type of case study is employed, the investigator presents a descriptive theory that establishes the overall framework for the investigator to follow throughout the study (Lune & Berg, 2017). It is necessary to note that before embarking on the study, the researcher first needs to establish the units of analysis in the study. Descriptive case studies differ from explanatory ones in that the researcher would focus on the uniqueness of the case and would not try to develop an inferential model that would necessarily be applied to other cases (Lune & Berg, 2017).

It is actually the type of phenomenon under investigation that dictates the type of case study research design to be employed. The phenomenon that is being investigated can be researched, using all the designs, as explained. The main issue to take cognisance of when conducting case study research is generalising. Data collected through a case study approach must be generalised without compromising quality. Hence, data must be rich in order to gain an understanding of the phenomenon under investigation. This is supported by Lune and Berg (2017, p. 178) who are of the opinion that when case studies are properly undertaken, they should not only fit the specific individual, group or event studied but should generally provide an understanding of comparable individuals, groups and events.

When conducted well, case study research is a powerful tool because there are many issues and events that cannot be properly understood without this kind of deep, intense study from multiple angles (Lune & Berg, 2017 p. 180). Thus, unlike other research methods, case study research provides more context and meaning to the uniqueness of each case. However, the researcher must not get carried away by providing too much information because case study research encourages fine-tooth comb analysis. The main idea is to unveil what other researchers might have missed.



Case study research is versatile because it can be used in so many different ways; this can be based on any mix of quantitative and qualitative evidence (Lune & Berg, 2017) When a researcher does this it yields rich data which can be generalised and clear inferences will be made. This is one of the reasons why case study research is widely recognised in many social science studies, especially when in-depth explanations of a social behaviour are sought after. Researchers who have contributed to the development of case study research and its various designs come from diverse disciplines and their philosophical underpinnings have created a variety and diversity in approaches used (Harrison et al., 2017). This makes it easier for information science researchers to embrace case study research because it is relevant to all the disciplines. To appreciate and understand case study research better, its historical development needs to be understood.

## **HISTORICAL DEVELOPMENT OF THE CASE STUDY APPROACH**

Frederic Le Play first introduced the case study method into social science in 1829 as a handmaiden to statistics in his studies of family budgets (Edward, 1947). However, the antecedents of modern-day case study research are most often cited as conducted in the Chicago School of Sociology between the 1920s and 1950s (Stewart, 2014). Anthropologists practised their methods on university cultures by conducting lengthy case studies involving field-based observations of groups with the aim to understand their social and cultural lives (Creswell et al., 2007; Johansson, 2003; Stewart, 2014). Contemporary case study research is said to have its origins in qualitative approaches to research in the disciplines of anthropology, history, psychology and sociology (Merriam, 1998; Simons, 2009).

In all these disciplines, case studies were an occasion for postulating new theories like in the grounded-theory work of sociologists, Glaser and Strauss (1967) and Lune and Berg (2017). One of the areas in which case studies have gained popularity is in education, specifically educational evaluation, MacDonald and Walker (2006), MacDonald, (1978), and Kushner, (2000). Comparative case studies in social science, policy and education research discuss one approach which encourages researchers to compare horizontally, vertically, and temporally (Bartlett & Vavrus, 2017).

It is increasingly difficult to ignore case study research, because it is a popular research method, especially among qualitative researchers. In support of this notion, Hyett, Kenny and Dickson-Swift (2014) add that several prominent authors have contributed to methodological developments which have increased the popularity of case study approaches across disciplines. A study by Ngulube and Ukwoma (2019) seems to support the claim since the case study was second in popularity in LIS research in Nigeria and South Africa.

Theory building can be designed by following the steps illustrated in the diagram below adopted from Yin (2009, p. 39). The diagram illustrates that if two or more cases are shown to support the same theory, replication may be claimed as indicated in the diagram. In terms of the diagram illustration, the researcher should aim for level-two inferences when doing case studies, (Yin, 2009).

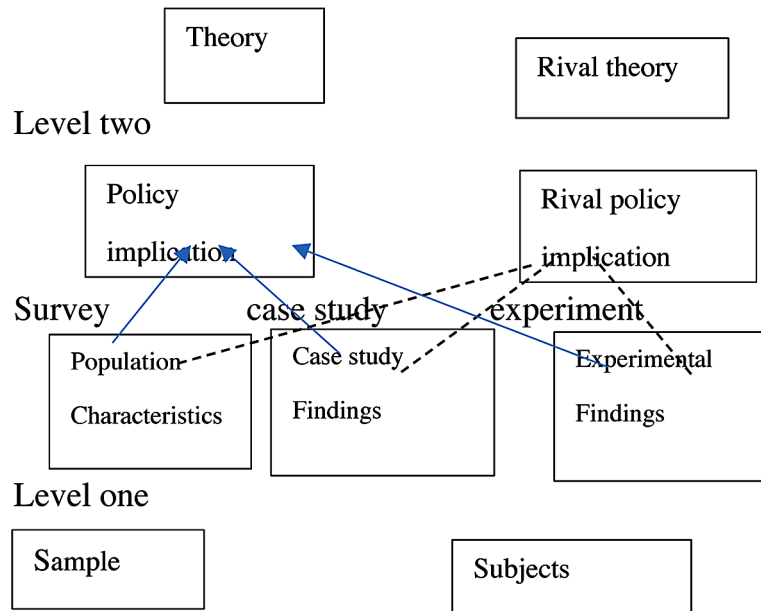
According to Yin (2009), a good case study investigator should make the effort to develop the theoretical framework, as illustrated in the diagram. They examine one or more sites either for the purpose of examining a situation of unique interest with little or no interest in generalisation; or to call a highly generalised or universal assertion into question. This method is useful when having to answer cause and effect questions. These serve to aggregate information from several sites collected at different times. The idea behind these two levels is that the collection of past studies will allow for greater generalisa-

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tion without additional cost or time spent on new, possibly repetitive studies. Furthermore, these two levels keep the complexity of the phenomenon investigated manageable and clarify the task of selecting which cases to study.

In terms of information science, Ocholla and Roux (2011) recognise the growth of theory in library and information science as a distinct subject; and that information science largely relies on theories from other disciplines.

Figure 1. Making inferences (Yin, 2009, p .39)



**USES OF CASE STUDY RESEARCH**

The fundamental goal of case study research is to conduct an in-depth analysis of an issue, within its context with a view to understand the issue from the perspective of the participants (Merriam, 2009; Simons, 2009; Stake, 2006, Yin, 2014). Furthermore, scholars tend to use case study research because of the numerous advantages it offers researchers who are interested in comprehensive and wide-ranging perspectives and insights into a phenomenon under investigation.

Case studies are popular in business education where they are commonly called case methods and casebook methods (Ellet, 2007). Case methods or casebook methods have been a highly popular pedagogical format in many fields ranging from business education to science education. Harvard Business School has been among the most prominent developers and users of teaching case studies (Garvin, 2003; Ellet, 2007). The business school faculty generally develops case studies with specific learning objectives in mind. Additionally, relevant documentation such as financial statements, time lines and short biographies, often referred to in the case study as exhibits and multimedia supplements, such as video-recordings of interviews with the case subject, often accompany the case studies. Similarly, teach-

ing case studies have become increasingly popular in science education. The National Center for Case Studies in Teaching Science has made a growing body of case studies available for classroom use for university as well as secondary school coursework, Palmer and Lordanou (2015).

Case study as a research approach is also gaining popularity in developing theory. Researchers employ it in theory building in various disciplines. The next section describes the use of case study in the development of theory.

## **CASE STUDY AND DEVELOPMENT OF THEORY**

Case research is related to theory building and theory testing, but is strong in theory building, (Lune & Berg 2017). This is supported by Yin (2003) who argues that there has been a revived interest in the role of theory and case studies. The use of case study in developing theory has been utilised successfully in many disciplines ranging from education and business to medicine and social sciences (Alexander & Bennett, 2005). Researchers, like Eisenhardt (1989) cited in Lune and Berg (2017), argue that case data is valuable for grounded theory research in that it challenges theoretical assumptions with real-life data; defines new areas for research by exposing unanticipated findings and has high empirical validity.

A cursory review of the literature suggests that a vigorous renewal of this interest appears to have occurred in the areas of business, marketing and information systems and the social sciences (Lune & Berg, 2017). Information science, as a social science, utilises case study in theory building, since it is a process of scholarly inquiry and exploration, the underlying purpose of which is to create new knowledge.

To develop a theory by using case study, the researcher needs to start with a research idea and then formulate a research question or topic. To strengthen this claim Lune and Berg (2017) say that in order to develop a theory the researcher starts with an idea and then develops a plan including whether to use a single or multiple-case approach and consider how data will be collected. The same approach is commonly used when developing grounded theory.

## **DEVELOPING GROUNDED THEORY THROUGH THE CASE STUDY METHOD**

Grounded theory “merged qualitative field study methods from the Chicago School of Sociology with quantitative methods of data analysis” (Johansson, 2003, p. 8), resulting in an inductive methodology that used detailed systematic procedures to analyse data, (Harrison et al., 2017).

However, theory development from case study approach is traditionally associated with multiple rather than single cases (Eisenhardt & Graebner, 2007; Ngulube & Ngulube, 2015; Yin, 2009). The illustration clearly explains the importance of case study research in theory building and testing. Furthermore, case study research assists in providing a description of a phenomenon, testing theory or generating theory (Eisenhardt, 1989).

Apart from this, Lune and Berg, (2017) add that Howard and Oberstein (2001) also developed a model of organisational fields from his study of community-based responses to HIV/AIDS. Lune and Berg (2017 p. 171, add that by concentrating on a single phenomenon, individual, community or institutions the researcher aims to uncover the manifest interactions of significant factors characteristic of this phenomenon, individual, community or institution. In this instance the researcher is able to capture

the various nuances, patterns and more latent elements that other research approaches might overlook (Lune & Berg, 2017 p. 171). In addition, case study research is given the credits of focusing on holistic description and explanation of a phenomenon. The following section deals with the advantages of case study research.

## **ADVANTAGES OF CASE STUDY RESEARCH**

Variations in terms of intrinsic, instrumental and collective approaches to case studies allow for quantitative and qualitative analyses of the data (Zaidah, 2007) which increase its popularity. The limitations of quantitative methods in providing holistic and in-depth explanations of the social and behavioural problems in question forced some researchers to turn to case study research. Limiting it to only the quantitative method would obscure some important data that need to be uncovered and give in-depth analysis of results. The detailed qualitative accounts often produced in case studies do not only help to explore or describe the data in real-life environments, but also help to explain the complexities of real-life situations which may not be captured through experimental or survey research (Zaidah, 2007).

Through case study methods, a researcher can go beyond the quantitative statistical results and understand the behavioural conditions through the actor's perspective, (Zaidah, 2007). By including quantitative and qualitative data, a case study helps to explain the process and outcome of a phenomenon through complete observation, reconstruction and analysis of the cases under investigation (Tellis, 1997).

Another noticeable advantage of a case study method is that it helps a researcher to closely examine the data in a specific context. In most instances, case study research concentrates on a small population or selects a small geographical area as sample of study because case studies, in their true essence, explore and investigate contemporary real-life phenomenon through a detailed contextual analysis of a limited number of events or conditions, and their relationships, (Zaidah, 2007).

Another good advantage of a case study is that the case study research method investigates a contemporary phenomenon within its real-life context when the boundaries between phenomenon and context are not clearly evident (Yin, 1984:23). In other words, a case study is a unique way of observing any natural phenomenon which exists in a set of data (Yin, 1984, cited in Zaidah, 2007).

A number of researchers used the case study research approach successfully in theory development. Among them are Stavros and Westberg (2009). In this study they used a case study to examine the factors driving the adoption of relationship marketing within major professional sporting organisations in Australia. The study investigated six Australian sporting organisations that use multiple data collection methods including semi-structured interviews with several senior executives in each organisation, secondary and historical data sources and participant observation. The findings were that using triangulation and a multiple case study approach provided a richness of information which, upon analysis within and across cases, revealed several commonalities and some limited diversity. Using this approach maximised the depth of information and increased the transferability of the findings to allow for the development of a conceptual model, which advances relationship-marketing theory.

The same approach was used by Voss, Tsikriktsis and Frohlich (2002). Their paper provides guidelines and a roadmap for operations management researchers who wish to design, develop and conduct case-based research. This implies that case study research can be used to develop theories. It can also be suggested that the same method can be utilised in other fields, among which is information science.

## **DISADVANTAGES OF A CASE STUDY RESEARCH**

Case studies provide very little basis for scientific generalisation, since they use a small number of subjects. Some case studies are conducted with only one subject (Zaidah, 2007). Thus, they are criticised for their lack of robustness as research tools (Zaidah, 2007). Case studies of ethnographic or longitudinal nature can elicit a great deal of data over a period. The danger comes when the data are not managed and organised systematically (Zaidah, 2007). Additionally, the researcher's feelings and opinions can affect data analysis; and this will cause bias. Case study research methods, like all research methods, have limitations and flaws; thus, it is more appropriate for some situations than others, as alluded earlier. The use of triangulation and multiple cases compliment the weaknesses of case study research. This is the reason why there are more advantages than disadvantages.

## **EVALUATING CASE STUDY RESEARCH**

The researcher needs to look at the weaknesses and strengths of case study research in order to come up with valid results. Greenwood and Levin (2007) consider reliability and validity to be the researcher's "amulet" in conventional science research but these do not apply when evaluating case study research studies. Therefore, case study research should not be evaluated using the principles embedded in the positivist paradigm. This is supported by Ngulube (2015) who maintains that even if the evaluation of qualitative studies is a contested terrain, studies are generally evaluated for their trustworthiness, credibility, dependability and transferability. The same criteria can be used for case study research if viewed from an interpretivist epistemology.

## **OVERCOMING THE DISADVANTAGES OF CASE STUDY RESEARCH**

From the literature, it can be noted that case study research is now indisputably prominent. Researchers like, Yin (2009) and Greenwood and Levin (2007) agree on the notion that the case study method allows for the thorough analysis of the complex and particularistic nature of distinct phenomena. Some researchers have a high esteem for case study research while others criticise it for its limitations. One of the main criticisms of case study research is that the data collected cannot necessarily be generalised to the wider population. The drawback of a single case design is its inability to provide a generalising conclusion, specifically when the events are rare. One way of overcoming this is by triangulating the study with other methods to confirm the validity of the process (Zaidah, 2007).

Again, there is the possibility that the description lacks rigour and that problems may occur during the project (Zaidah, 2007). A common criticism of the case study method is its dependency on a single case exploration which makes it difficult to reach a generalising conclusion (Tellis, 1997). The employment of a number of qualitative research instrument strengthens case study research, given that the case study has often been seen as more of an interpretivist than and idiographic tool; and the fact that it has been associated with a distinctly qualitative approach. This can, however, be complemented by using multiple cases and triangulation as mentioned earlier. Researchers need to understand when to use a single case and when to utilise a multiple case.

## ***The Contribution of Case Study Research in Information Science***

All research methods have challenges and disadvantages, Yin (2014, p. 73), suggests that these can be minimised by adhering to the following basic list:

- Ask good questions – and interpret the answers fairly
- Be a good listener – do not be not trapped by existing ideologies or preconceptions
- Stay adaptive so that newly encountered situations can be seen as opportunities and not threats
- Have a firm grasp of the issues studied, even when in an exploratory mode
- Avoid biases by being sensitive to contrary evidence, also knowing how to conduct research ethically

Researchers should try to take note of the listed desired attributes advocated by Yin (2014), in order to cater for the weaknesses of case study research. When these attributes are taken into consideration there will be rigour, which minimises bias and factors that decrease confidence in outcomes. As a result, it makes the data valid and conclusions can be drawn with confidence.

The information science literature clearly needs ideas about the various forms in which case studies can be reported and how this can be understood. Consequently, most case study research is reported in a cultivated style that allows the researcher to employ multiple cases and a variety of data collection methods. A researcher is faced with a large variety of forms of case study accounts to choose from when writing a case study. What the researcher should bear in mind is that engaging in case study involves formulating research questions; gathering data; analysing the case and being reflective about the position of the researcher with regard to the case, among many other things (Yin, 1994; Stake, 1995).

## **ETHICAL CONSIDERATIONS IN CASE STUDY RESEARCH**

Thomas (2011) defines ethics or moral philosophy as a branch of philosophy that involves systematising, defending and recommending concepts of right and wrong conduct. The field of ethics, along with aesthetics, is concerned with matters of value and therefore comprises the branch of philosophy called axiology (Thomas, 2011). There is a need to reconceptualise research ethics in the context of case study research. Ethical issues within research are commonly dealt with, specifically when looking at how much ownership participants have over the research, data, interpretations and outcomes. Another factor to consider is the mechanism used to review roles and responsibilities as the project progresses. The researcher can also protect participants by preserving their identities in the project, as dictated by ethical principles.

Apart from that, professional standards of ethical conduct in all research should contain core aspects including a commitment to avoid conflicts of interest. Furthermore, it is essential to maintain trust and confidence in the integrity of the entire research processes. The knowledge of ethics is of fundamental importance in information science research, because most case study researches deal with people and documents of individuals, businesses, government and organisations.

## **FUTURE RESEARCH DIRECTIONS**

There are many shades of case study research and it is imperative to determine which shade of a case study research is best suited for information science. Information science researchers can also position and legitimate themselves and try to incorporate multiple cases and triangulation in their research. This will strengthen the method and win the respect of those who criticise case study research for its lack of rigour and difficulty to generalise. This generates an image that case study research is a distinctly identifiable research method (Stake, 1995). Case study, in itself, is very diverse and it is difficult to view it as one uniform method of research, because case studies can be designed and conducted in various ways; moreover, data gathering and analysis can be done in numerous ways.

## **CONCLUSION**

There is no right way to conduct case study research agreed on. As an approach to inquiry, case study research is multidimensional, multi-purposeful, engages numerous research instruments and it is flexible (Harrison et al., 2017). Further experience with theory-oriented case study research will without any doubt lead to further refinements. Case study researchers must gather efforts to stimulate interest in improving and disseminating case study methods. In information science, case studies are not foreign; however, researchers need to involve triangulation more to narrow the gap of criticism and make it more attractive for interdisciplinary research. In this chapter case study research is approached as a methodological issue, it is therefore, on the researchers to choose the appropriate case study design when conducting research in information science and other disciplines.

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# Chapter 30

## Qualitative Methods in Research: Alternative Approaches and Navigating Complexities

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### **ABSTRACT**

*This chapter discusses various methods and approaches to data collection under the qualitative methodology framework, noting that these methods provide rigour and depth understanding in an inquiry. Though the chapter touches on traditional qualitative methods such as the interview and observations, it focused more on examining alternative and non-traditional qualitative methods in data collection, such as the bricolage and distance researching. The chapter further identified other strategies such as sampling, triangulation and ethical considerations that may be relevant to a qualitative study. The chapter helps the reader to reach a broad-based understanding as to the location of qualitative research and the methodological demands necessary to apprehend complex social worlds of studied participants.*

### **INTRODUCTION**

The qualitative method has become a dominant approach characterizing much of the research that is conducted by both students and senior researchers. In some quarters the qualitative method is also referred to as the naturalistic approach. Eisner (1985: 198) argued and rightfully so, that 'the field of research needs to avoid methodological monism.' Methodological monism can be seen in two ways:

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the first may have to do with a preoccupation or obsession with doing all research in a positivist way: and secondly, the failure to appreciate that some aspects of diverse methods can and do co-exist and complement one another.

Patton (2015) also contends that depending on the strategy intended to elicit data from different sources within the same enquiry and other alternative approaches can be applied. This chapter will discuss main methods in qualitative research and other alternative research strategies relevant to a qualitative inquiry that are suitable in apprehending phenomena especially in challenging contexts devoid of the convention. The main areas to be discussed in this chapter will include the following:

- Brief Background
- Research Methods
- Triangulation
- Alternative Strategies in Qualitative Research
- Ethical considerations
- Access and Sampling

By the end of this chapter, the reader should be able to explain some qualitative approaches to data collection, identify qualitative sampling procedures, and examine the nature and characteristics of alternative methods.

Furthermore, they should be able to make some ethical considerations related to qualitative methods and locate the critical place of validity and triangulation in qualitative methods.

## **Case Study**

*Mary, an undergraduate student had her first encounter with research methods and found it difficult to distinguish between qualitative and quantitative methods of research. She set out to write a research proposal where she had to give a rationale for choices made. Having chosen to collect data using the interview and observation methods she went on to propose that she will use random sampling on participants and indicated how she will interact with participants. Unfortunately, her lecturer marked her down for failure to align relevant sampling strategies to the chosen qualitative methodology. Worse still, she failed to consider ethical standards about interactions with participants. This disappointed her a lot but later motivated her to read more on research methods going into her master's degree, to align and support her rationale more effectively.*

The case study above shows how easy it is, especially for beginners in research studies to falter when it comes to aligning methodologies and proving appropriate rationale and expectations for a qualitative inquiry. It is noted that while the truth is good, respect for human dignity is better. By its nature, the qualitative method is considerate of ethical issues. The researcher needs to act ethically in accessing various information, data and setting up meetings or interview times. Despite varied claims about what quantitative methods can achieve, it is imperative to state that the qualitative method is critical for enhanced understanding in an enquiry.

## **BACKGROUND**

Chapter 3 on interpretive research has provided a suitable philosophical background to this chapter. In the qualitative approach, data never ‘speaks for itself’ as in some quantitative research, but the researcher assesses data to figure out implications. While the quantitative approach would normally seek to control the research settings, informants help the qualitative researcher to engage in closer, and more equal relationship, sometimes using ‘inside’ knowledge of the group studied, having been part, as a practitioner, and also familiar with many aspects of their culture (Hyatt & Simons, 1999). Both the participants and the researcher are pivotal in the construction of meanings through their interactions and interpretations of their social worlds. Despite being a major instrument in the research process, the researcher must always be careful not to have an overbearing and prejudicial influence in a research study. In the section below we provide a detailed account of which research methods could be useful in a qualitative inquiry and what type of qualitative methods to use in unconventional research contexts such as in conflict or under totalitarian regimes.

### **The Interview**

Qualitative researchers often favour the interview method where investigations are complex and personal, such as in this enquiry on sensitive issues. The interview is often time-consuming and as a rule, expensive. Sometimes it can be applied in the form of semi-structured telephone interviews.

The positive attribute of the interview is that it offers opportunities to explore studied phenomena in-depth, providing access to what is ‘inside’ a person’s head. Furthermore, this view incorporates understanding, as stated earlier, that in qualitative research ‘data never speaks for itself’, since there are mediated influences by those who are privileged to interpret phenomena (Basit, 2010). When conducting interviews, it is often best to approach those participants who may have vast experience within their environment. A good example could be seasoned educationists in schools or communities who may have served alongside different educational and political government officials and community leaders spanning many years. Though few, because of their privileged standing, it could be said that their ‘heads’ possess immense knowledge and information on a wide spectrum of subjects also useful in an interview. A relatively small number of participants is often recommended when conducting interviews. This is seen as both productive and manageable. Furthermore, the manageability of interviews can succeed if trust and interpersonal relations already exist between the interviewer and the interviewees.

### **Telephone Interviews**

For interviews that are conducted over the phone, the discussions must focus on core issues and possible solutions, since time is often limited. Furthermore, a qualitative interview, can at times be informal, open-ended, capturing the uniqueness and to an extent unstructured. Both the interviewer and the interviewee should discuss looking from ‘inside’ the studied system or phenomena and not outside.

Several attractions to telephone interviewing is noted as less costly than face-to-face interviewing, reduced travel; affords the researcher the ability to administer interviews centrally, the response rate is higher than for example questionnaires and is more often convenient to respondents than if visits were made (Cohen, Manion & Morrison, 2017).

There are some ethical challenges when conducting telephone interviews. The researcher may not guarantee confidentiality in cases where there are hostile forces who may intercept communications. This may be particularly harmful when researching conflict zones. The other challenges may involve making prior appointments to telephone the key participants at their homes after work since at work they are often busy. The researcher should be considerate and careful to allow situations and times that suit participants best. For example, in some interviews, a crying baby may partly disturb the flow of the interview and the researcher may have to switch off the recorder to allow for calm and then resume later. If the participants request the recording to be switched off at intervals, they should be free to do so at any time.

*Table 1. Summary of Interview Types*

Interview Type	Structured Interview	Semi-structured	Unstructured Interview
Definitions	The research questions are predetermined and prepared by the interviewer ahead of the scheduled interview.	Maintain some form of structure but also provides the researcher with the opportunity to probe participant for more details	Refers to an interview in which the questions to be asked at the interview are not set in advance.
Type of Data	Quantitative	Mixed-Method	Qualitative
Research type	Descriptive	Mixed-Method	Exploratory
Type of Questions	Closed-ended	Mixed-Method	Open-ended
Type of evaluation	Explicit	Mixed-Method	Implicit
Paradigm	Positivist	Mixed-Method	Interpretivist
Uses	For validation of results, when the number of candidates is quite large. To prove or disprove the theory	Mixed uses	To gain deeper knowledge and understanding to judge what is 'true'.

**Ethical Issues**

To satisfy some ethical issues during the interviewing process, interviewers should avoid the tendency to seek answers that support their preconceived notions (Cohen, Manion, & Morrison, (2017). Though there may be misconceptions of what the respondent is saying, misunderstandings by respondents of what is being asked and general problems of attitudes, opinions and prejudices of the interviewer, the interviewer should endeavour to limit these. An atmosphere should be created where the respondents are free, jovial and may allow them to digress to talk about other related issues impacting the studied phenomena. Some ethical considerations may include making prior appointments to telephone the participants at their homes after work since at work they are often busy. The interviewer should be considerate and careful to allow situations that suit participants best. For example, the interviewer can switch off the recorder to allow for calm and then resume later. Where the participants want the recordings to be switched off, they should be advised that they are free to make such requests at any time.

## **Questionnaires**

When using a mixed-methods approach, the quantitative questionnaires may be used, mainly as a preliminary survey to generate leads before deeper exploration using qualitative methods. It is widely believed that the questionnaire technique for gathering data is used in more than half of the total research in education, but not without criticism of course. It is noted however that questionnaires tend not to be popular with ethnographers. This could be so because quantitative questionnaires do not allow for the exploration of phenomena in-depth as in qualitative methods (Holliday, 2016). Designing and administering questionnaires has never been an easy task as observed by Bell (2018). In designing the questionnaire, the researcher can include both qualitative and quantitative questions. Purely quantitative questionnaires are useful when dealing with many respondents. This is where one is interested in popular opinion or perceptions on a given subject as opposed to establishing deeper meanings. During the designing of questionnaires, one should be mindful to communicate effectively by attending to issues related to ambiguity, clarity, complexity and ease of response. Throughout the quantitative questionnaire, respondents are usually required to tick boxes as in a Likert scale response, choosing one out of five possible given answers. More information and examples are provided under the Quantitative methods chapter. Bell (2018) observed that responses to semi-structured questions such as in qualitative questionnaires can produce more useful information and the ability to follow up and clarify issues with respondents. Furthermore, due consideration can be given to the pending analysis stage where there are data logging and collation or in the case of qualitative questionnaires, forming patterns (Wolcott, 1994) and thematizing and categorising (Strauss & Corbin, 1998).

## **Brainstorming**

The brainstorming activity can involve many participants but in manageable groups. For example, the participants can be prompted to scatter their ideas around a major question. Research may, therefore, provide blank sheets of an A4 size paper, with a question at the centre. In response to the question, the participants will have to respond to varied angles. This A4 paper may be completed in the presence of the researcher or distributed for use by focus groups, e.g. a students' focus group under teacher supervision. Brainstorming can also be done individually where respondents record their ideas on an A4 paper provided, thereby ensuring the generation of ideas, development of themes and confronting underlying assumption in a study. The brainstorming activity may help the researcher to refocus, based on the respondents' perceptions, and to effectively pursue emerging understanding or further lines of enquiry in the development of the inquiry.

## **Poetry**

Data collection through poetry can provide an in-depth study of participants' perceptions and may be suitable to use on students' participants who are likely to be keen on poetry writing. The researcher may also consider using poetry collected from school magazines if studying a particular school culture and organizational behaviours. It is noted that this is a not so common form of collecting data but has received much support from researchers as one of the best. Poetry is akin to storytelling. Bauman (1986: 3) for example, suggests that stories are oral literature (poetry included) whose, 'meanings, forms and functions are situationally rooted in cultural contexts, scenes and events, which give meaning to the action.'



It is noted that stories have a legitimate place as an inquiry method in educational research (Basit, 2010; Cohen, Manion & Morrison, 2017). For example, a researcher may select poems that are indicative of students' concerns in a school setting and occurring from year to year. It may not be possible to analyse all the poetry produced by students and hence the need to focus only on themes perceived as recurrent across the period studied. In most context, poetry is likely to capture in-depth perceptions, through qualitative stories bordering on organizational activities, socio-economic conditions and the macro-politics. In analyzing poetry, the researcher can still use conventional techniques such as categorizing and coding of content, thematizing and building up concepts relevant to the studied phenomena. The use of poetry comes out as an extremely suitable instrument in qualitative research since the researcher's aim is often to enter the 'minds and hearts' of people studied. Such recording, as demonstrated in poetry, is meant to relive, first an emotional experience and then through the reflective process, a rational realization.

## **Observation Accounts**

**Participant observations** are ideal in ethnographic research. This is so because this method affords a better penetration of the group under study. The researcher personally experiences the culture together with others, and there is full access to the group's activities. It is noted that the danger with participant observation could be to overshadow the lived experiences of others by going 'native', that is, identifying so strongly with the group and becoming defensive of it (Bell, 2018). The researcher may avoid going 'native' by deploying other participant-observers within the inquiry or by use of research assistants when conducting extensive studies. It has been discussed earlier how difficult it is to exercise neutrality in any enquiry (Wolcott, 2004), or due diligence and honesty, (Cohen, Manion & Morrison, 2017). Nevertheless, the researcher must try as far as possible and to the best of their ability to record observations as seen and heard without prejudice to any party. It is noted that such intensions are aspirations rather than unproblematic realisations.

Observation accounts can be used to record practices and processes in the life of participants. A researcher within an educational context may, for example, want to observe children's behaviour and how they learn. During observations, it may be helpful for the researcher to fuse this activity with other reflective accounts bordering on issues being studied. It is advisable that other than making observations about one's organisation's practices and processes, further observations on other issues surrounding the organisation or one's professional experiences through interactions must be brought to bear. As a participant-observer the researcher is afforded a great deal in that not only are they observing behaviour but have also privileged access to the meaning of most behaviours and interconnectedness of processes.

Through participant observation is an ideal, **non-participant** observation is quite common. The researcher's role is only that of an inquirer who observes without interference. In an extended study, this method can be used in the preliminary stages of an inquiry before establishing areas and participants of note to focus on. A non-participant observation activity can be audiotaped or use notepads to jot notes while observing participants in action, conversing or performing. In such cases the researcher ought to position the recorder strategically and must have tested it before adopting a quiet position, to ensure noninterference in the proceedings.

## **Cartoons/Short Articles**

Walker (cited in Schratz, 1993: 78) observed that one of the intriguing reasons for the use of pictures (images) in research is ‘that their use touches on the limitations of language, especially language used for descriptive purposes... the potential exists however elusive the achievement, to find ways of thinking about social life that escape the traps set by language.’ If the researcher chose this method, it may entail collecting a cross-section of relevant newspapers and magazines within a studied population, with a clear focus on related articles and cartoons that depict aspects of the studied phenomena. Some of the cartoons and articles may cover incidents in targeted organisation or communities. In some cases, the articles and cartoons can also be used to depict interrelationships between the micro-politics and the macro-politics of an organisation being studied.

Most articles are likely to be drawn from private and public newspapers perceived to be independent in their reporting, though this may be debatable as well. Use of more independent sources should be part of efforts towards seeking credibility and being ethical in the inquiry. Considerable effort can be applied to establish a useful and honest interpretation of selected cartoons. It is also possible to use background knowledge and related articles in the newspapers or editorial comments (Prosser, 2005).

### **Example**

*Numerous cartoons can be collected from national newspapers in a country or city, which presents an image of the macro-political state of the citizens in that country, and how these interact with micro institutional arrangements being studied.*

Considerable effort ought to be applied in establishing useful and honest interpretation of these cartoon images and the corresponding articles. The researcher should also be able to use background knowledge and other related articles in the media such as editorial comments.

## **‘Parliamentary’ Debate**

Data collection through debates can be fun as well as informative. These sorts of interaction are best suited to students and can be managed and recorded with the help of teachers within school settings. When using this method, the researcher has to be more organised; address issues of access in advance and keep in close liaison with teachers who may have offered to help. Sometimes teachers or other contact persons may have no choice but to use their intuition since risks and other ethical issues may be involved. The researcher will have to arrange the recording equipment in advance and strategically place these in suitable positions. Problems with the functioning of recording equipment are often encountered if the preparation is shoddy and testing is done at the last minute. The researcher will have to decide whether to use audio or videotaping, depending on the needs of the study and the depth of the inquiry.

The debates by students can, for example, centre on pertinent issues affecting the micro-politics of the school bordering on controversial policies or other educational processes and practices of interest. Students may also engage in macro-political issues such as national policies on tuition fees or engage in evaluative arguments on meritocracy in education. In this type of approach to data gathering, the research (unlike in the interviews where the researcher facilitates much) is left to the participants who

interact with one another and produce responses, which often help develop themes, insights, or generate hypotheses. Below we discuss triangulation, noting how pivotal a notion it is in a qualitative study.

## **Triangulation Strategies**

Engaging in complex studies demands that the researcher has previous and deeper knowledge of the studied social worlds and that various methods be applied to achieve rigour in the study (Vail, 2001). It requires the researcher to approach the inquiry from a cross-sectional, multidisciplinary perspective to attend to the complexities of participants' social worlds. Triangulation in methods may involve the use of brainstorming, interviews, poetry, observation accounts, focus group, debate, cartoons, and newspaper articles. In a school context, for example, the triangulation of participants may involve teachers, students, lecturers, trainee teachers, and parents. During the analysis stage, theoretical triangulation can be used in a way that includes opposing theories such as functionalist theories, conflict theories and post-structuralist theories. Despite theoretical tensions, the varied theories tend to add strength and validity in the inquiry. The multidisciplinary ambition and triangulation in a research study thus avoid some allegations of reductionism but strives for rigour amid complexity (Kincheloe and Berry, 2004). Without effective triangulation strategies, a researcher's efforts in complex studies could easily be compromised or even wholly negated.

## **Applying Triangulation in Qualitative Research**

A researcher can fairly claim to have satisfied several attributes on triangulation based on the outline below. Using methods discussed above as an example and based on triangulation as expanded upon by Kirk and Miller (1986), the following dimensions of application can be advanced.

- **Diachronic reliability** – (stability over time) – the use of poetry from students, as discussed above, can be collected from school magazines or other sources spanning several years. The poetry written years earlier might be expected to have dealt with different issues from the present, but the patterns and themes can sometimes be seen running through time. Practices and processes observed over time may also fall under diachronic reliability.
- **Synchronic reliability** – (Similarity of data gathered at the same time) – from the collated data it is likely that all the institutions and participants who responded, share strong common perceptions on the studied phenomena.
- **On combined levels of triangulation** – (Individual, group, organization, societal) – in this instance the researcher should seek responses from a cross-section of participants, both from within and outside the organisation. For example, when studying certain practices and processes in education, one may include teachers, lecturers and trainee teachers, and some students. The focus on these participants may be influenced by the perception and judgement that they are the major customers of education and therefore best suited to inform the study.
- **Investigator triangulation** – (more than one observer) – not just the chief researcher is the observer but other professionals, including teachers, lecturers or research assistants, assist in the research process and record their views on the phenomena studied.

## **Qualitative Methods in Research**

- **Space triangulation** – (the study is not limited to one culture or sub-culture) – the researcher makes effort in their study to address or gather data on sub-cultures, for example, involve institutions from urban, rural and semi-urban settings.
- **Methodology triangulation** – The researcher uses different methods to address the same phenomena under study. These could be questionnaires, interviews, observation accounts and personal constructs. In larger studies, participants can experience more than two methods of data collection to enhance methodology triangulation.

It is noted that the above forms of triangulation have not been discussed to prove the research reliability and perchance achieve some validity. On the contrary, these have been included primarily to show the extent of triangulation, the multiplicity in methods and the praxis in research that may go into research activities (Kincheloe & Berry, 2004). Such an effort marks the researcher's elaborate expression and desire to achieve a 'good enough' inquiry amid unavoidable and contingent complexities.

### **Critical Thinking Challenge 1**

*Demonstrate how you will collect and analyse data using the following research instruments.*

- Interview*
- Observations*
- Survey questionnaire*
- documents*
- story/cartoons*
- debate*
- Brainstorming*
- poetry/songs*

## **ALTERNATIVES IN QUALITATIVE RESEARCH**

It is noted that at times the research community get so bogged down and rigid on how research validity and credibility ought to be achieved and fails to appreciate the dynamism brought about by other unexplored criteria or developments in technology such as using emails, telephone interviews, postal surveys, and contact persons. Wolcott (2004: 66) observes that though being in the field is important, the difference can sometimes be negligible since fieldwork by its nature 'is the intent behind it rather than the label itself... a form of enquiry in which one is immersed personally in the ongoing social activities of some individual or group for research.'

### **Distance Researching**

Due to political conflict and the endemic culture of violence and lack of tolerance, researching from afar (Vail, 2001) may be necessary as well as effective. Communication with contact persons in the field becomes pivotal in that through their efforts the response rate in all tasks can be enhanced. Using inside knowledge of studied institutions, coupled with some insider status, especially for practitioner-

researchers, distance researching can afford the inquirer a safe but effective penetration of an otherwise politically hostile environment. Since most research is political (Hammersley, 1999), being out there in the field might lead to harm or make the researcher an easy target for abuse, thus impeding the study.

## **Researching Conflict Zones**

Vail (2001: 704) observes that ‘We should look at observing from afar as one of many tools in a well-rounded ethnographer’s potential tool kit.’ There are often two reasons why some researchers decide to research from afar. The first one as in the case of Simpson (2002) is often done for economic reasons. It is not uncommon that such researchers may also claim relief from the emotional drain of having to travel, work and live in forests observing and sometimes getting sick. The use of wireless technology enables them to observe and record in the comfort of their laboratories. The ability to research from afar may at times be met with celebration and fanfare by such scientists, as they get excited about what technology can do. On the other hand, researching from afar can arise if one is researching politically unstable zones in the world. There is the gravity of danger in seeking to work in a pariah state where conventional rules have been suspended and where one as a researcher, based on the subject pursued is most likely to be labelled ‘an enemy of the state’, and as such be persecuted, as are some journalists and researchers. It is therefore likely that if the researcher sought to research site, they would have been denied or grudgingly given permission only to be curtailed and restricted often with risk to own’s life and that of participants and associates.

The question of whether social science is political has been asked by Hammersley (1995) and he observed that there has been a cognitive revolution (Jacob, 1992). Hammersley (1995: 100) states that ‘today the situation is different. There is no doubt still that there are some who reject the idea their work is political, but it is much more common to find declarations or at least admissions that it is.’ In a conflict zone, the politicisation of research work makes the stakes even higher and may negatively contribute to an already emotive environment. Researching in Kosovo Moore (2003: 3) observed that in a conflict zone ‘there are paradoxical storms of counterproductive action that encourage the division of people into groups of us and them.’ In some countries, the uncivil and outright violent role played by the government militia militarized state organs, and the partisan secret service, on any perceived to be in the opposition has been well documented. It should be noted that the decision to research from afar often does not come lightly. Moore (2003: 4) further observed that “One’s position is also of importance when assessing a conflict. Tourists in war zones do not exist”. Research in conflict zones is more than an ethnographic or historical evaluation and the researcher should remember he is not merely an observer but seen as a participant amidst hostilities. As such research in ethnic war zones is qualitatively more difficult than most other research and the researcher must be aware of the problems of working in an environment empty of the convention.

## **Being Ethical and Cautious**

It is highly probable that by going into the field to carry out an empirical study, the researcher might ironically impede the study rather than facilitate the enquiry. Anderson (1999) commenting on researching in conflict zones observed that it is possible that in seeking to do well, we can inadvertently worsen a bad situation. It should be noted that such ‘dangerous’ participation in research often occurs in the background of suspended rule of law and societal norms and where the recognition of rights are endemic

problems (Moore, 2003). Revival (1999) records some experiences of PhD students in conflict areas in some parts of the world. To circumvent the situation some students have used case studies for countries such as Sri Lanka, Liberia, and Afghanistan to avert the often-difficult demands of having to address all levels of authority or having to 'suck up' too authoritarian regimes to gain access, which they say, is a highly politicised act. Some students have used emails, communicating with Non-Governmental Organisations (NGO) in the field to learn of the current situation and using NGO officials for follow-up processes. The article concludes by observing that personal safety is paramount for research and that one should never send someone to do things they would not do themselves. The researcher must negotiate with contact persons as to what is probable and what approaches would not cause them trouble. Researching from afar may also necessitate that funds be distributed to assist contact persons. It could be unethical, as well as detrimental to the study, to expect contact persons to foot some or all the bills particularly given the hostile economic challenges they may face daily in fragile states. Where funds or prizes must be distributed, this should be done fairly with no bribery implications. During the study, contact persons should be conscientious to exercise impartiality such that the study is not seen as advancing certain agendas but are professionals seeking to understand better a given phenomenon. One of the ethical challenges faced by those who research societies under violence and conflict is that the participants who volunteer information often do so (at risk to themselves) with the hope that such research is part of a process meant to end their misery. It becomes morally binding therefore that a researcher in a conflict zone finds opportunities for information dissemination and where possible incorporation into policymaking or conflict resolution processes.

### **Navigating Some Challenges**

Considering that in some countries, secret service operatives are also planted in certain institutions, including schools, the researcher's presence and line of enquiry might easily raise concern in some quarters. To circumvent that problem, it is much safer to use trusted contact persons, which could prove a useful strategy. The unfettered collection of data may not be possible in conditions where surveillance and intimidation are constantly present. The researcher should adopt new and sensitive lines of enquiry as a means of researching. This, however, does not mean the contact persons have an easy ride. Sometimes they may briefly suspend what the researcher has requested them to do for fear of reprisals if they were seen to be involved in quasi-political research activity. Contact persons such as teachers may also be hindered if they are in schools where children of government and secret service officials attend and may encounter difficulty holding and recording research activities on political or sensitive economic issues, though some will often find a way to do it somehow. The researcher must continue to seek other means, working in ways that preserved the safety and security of participants and contact persons but at the same time sustain a rigorous inquiry.

### **The Case for Distance Research**

It can be noted however that some researchers may feel that there are some risks involved with researching from afar because they believe that in ethnographic studies, especially, there is no substitute to being present, hearing, touching and seeing it firsthand. However, Hammersley (1984: 8) counters such an assertion as a 'highly misleading conception of direct observation associated with the idea that simply 'being there', immersing oneself in a setting offers a guarantee of validity.' Sanders (1998: 192), observes that

“if our ultimate goal is to truly comprehend the rich variety of perspectives and experiences that shape interaction processes, however, we must not avoid involving ourselves in, and emphatically sharing, the sorrow and joy, pain and conflict, that are integral features of social life”. Though the above assertion is valid to some degree, it does not consider the role of a distance researcher or a practitioner-researcher who may have previously spent several years working in the same field that is being researched. Furthermore, it does not take into consideration that one would have seen, touched, heard, felt and is now also helped by one’s reflective accounts notwithstanding numerous data sought through contact persons. Vail (2001) observed that perhaps even more important than self-discipline is the intimate knowledge of the immersion site. He further adds that without such knowledge few distance researchers would know how to recognise the sorrow and joy, pain and conflict, spoken of by Sanders (1998). It is noted that effective research from afar is only possible when the fieldworker has deep roots in the social world he or she is studying. Without such roots, the novelty performed ignorance, and problems of isolation and temporal constriction could all raise the justifiable concern of those who read the research (Wolcott, 1994; Vail, 2001). Concerning researching from afar, it is noted that we might be reluctant to accept the idea of fieldwork through telephone. But what about a survey researcher canvassing door to door? A mailed questionnaire may be sent from afar, but what about a face to face interview...By their very presence can they be said to be doing fieldwork? Need one go far afield to do genuine fieldwork? Despite reservations some conservative researchers might have on distance researching, it is observed that distance research and the extent to which the enquiry goes, can still be rigorous and credible enough in its interaction with the phenomena studied.

It is noted that those qualitative researchers who are pre-occupied with methods, do commit the very ‘sin’ committed by positivists when they reject interpretive research, questioning its validity and reliability

When researching from afar the challenge takes the researcher to three levels, the first one is to learn of the current social world of the researched subjects. Secondly, the task is to untangle how the present is different or similar to when one was a practitioner in the field since cultures and contexts are dynamic. Lastly, the aim is to establish how the collective situation can learn from others within or from similar or different types. For a research study set in politically unstable contexts, Vail (2001: 716) observes that ‘similarly stepping back from intense emotions like fear, repulsion, or ecstasy is often necessary for analysing data.’ The researcher should always aim at bringing about rigour in the enquiry and avoid some incapacitating eventualities in distance researching such as problems of access, contact, and abrupt changes to earlier arrangements resulting in delays. Vail (2001) advises that the researcher should employ a variety of ethnographic methods or use specialised skills to triangulate and provide a wealth of information. Such a multidisciplinary approach to distance researching helps attend to some questions on the validity in the approach. Report records suggest that the researchers working in conflict zones in Africa have ‘struggled to connect with the mainstream research community, yet are left to grapple in isolation with the special demands made on them in terms of research design, ethics, and analysis (University of Ibadan, 2002). From varied searches, little attention has been paid to the actual process and methods of researching often violent and politically volatile areas. It is noted that each political culture and terrain often calls for different methodological strategies and that more methodological research needs to be sensitised to such circumstances.

## Future Trends

Maybe in future, it would be readily acceptable to have a set of methodological strategies designed to research conflict or to conduct research from afar, as there exists for example, 'feminist methodologies.' The experiences of social distancing due to Covid19 and the associated challenges with movement will necessitate further moves towards more effective distance researching and designs. Such a paradigm shift in qualitative research will open new epistemological ground for researchers in distance researching and provide a good enough ground-breaking exercise for future enquiry. Some of the knowledge development areas in distance researching may include, but not be limited to, the following:

- The role of the Contact persons in distance research
- The use and development of technologies in distance research
- The nature and types of distance research
- Methods development in distance research e.g. unobtrusive methods
- The ethics of distance researching
- Philosophical underpinnings on Demystifying the myths of 'being there' immersed in the field

As this knowledge base is developed it should not be done as an end in itself, but as a means to an end. This implies that it should not end up creating other and new orthodox ways of doing research but should be a flexible transitional tool.

## ACCESS AND SAMPLING

### Access

Breaking down the cultural barriers or finding keys to cultural codes has never been easy for researchers (Hyatt & Simons 1999). The selection of institutions to be studied is likely to be influenced by the ease of access if gatekeepers are known to the researcher. There is often an advantage if the researcher shared in the cultures of the institutions studied, thereby minimizing challenges on cultural codes. Depending on the nature of the inquiry, contact persons at studied settings can be valuable resource tools. It is therefore wise to choose a research field that has people to rely on.

### Research Population and Sample

The research **population** and **sample** are critical terms when designing a research study in most fields. In qualitative research, a population is the largest group of targeted people being studied and a sample is a subset of that population deemed representative of the whole population. It is always important to ensure that there are enough people or items selected as a sample for the research study to be perceived as valid. It should be noted also that a given population may have more than one sample. In quantitative studies, a sample of the population is often used to generalise the findings. The researcher should also address **sampling bias**, a tendency to select participants that possess certain characteristics to reach findings.



## Why Do We Sample?

Sampling is important because the researcher may not be able to study the whole population due to large numbers. There is also the issue of costs involved if the researcher was going to access participants or elements in the population. From a methodological perspective, sampling is conducted to conclude studied populations. Some populations are so difficult to get access such that only a sample can be used e.g. prisoners, people with severe mental illness, disaster survivors etc. Where sampling design has been done effectively, the sample may be more accurate than if one had to study the whole population.

## Types of Sampling

There are two major types of sampling, namely probability and non-probability sampling. Non-probability sampling is largely aligned to qualitative research and these are briefly discussed below.

- **Intensity sampling:** In this type of sampling, the researcher chooses participants who afford the study of different levels embedded within the research topic. A good example is where the researcher might include both high and low achievers within an educational setting or work environment.
- **Homogenous sampling:** The researcher selects study participants who possess similar characteristics, which may be same age, education, employment, or place of residence. This sampling strategy usually produces a narrow-based and simpler analysis.
- **Criterion sampling:** In this sampling strategy, the researcher selects participants who meet some set of criteria or possess some needed characteristics. For example, the researcher may choose to study teachers who have no teaching qualifications.
- **Convenience sample:** This is a sampling strategy that chooses participants according to their convenient accessibility and proximity to the researcher. Since this sampling is also considered to be haphazard sampling, it can also be classed as probability sampling and therefore, usable in qualitative research. The process entails including whoever is available both in terms of time and place.
- **The judgement sample:** This involves obtaining participants who according to their knowledge, are familiar with the relevant characteristics in the studied population. For example, former students at a university or college may be the best sources of first-hand information on how to graduate successfully.
- **Purposive sample:** This is a sample that normally consists of rich information sources for in-depth study. Participants in this instance are chosen based on purpose. A good example when studying schools could be interviewing headteachers and/or long-serving teachers based on their in-depth knowledge of the education system.
- **Quota sample:** This entails gathering representative data from a group. The technique requires that representative participants are selected out of a specific subgroup and these should have exact numbers of participants with different traits. For example, one can interview 20 teenage girls with no educational qualifications and 18 teenage girls with educational qualifications
- **Snowball sample:** This entails participants nominating other potential sources of data to be used in the study and is most useful when finding participants is difficult. This sampling strategy is based on referrals from initial participants to bringing in more participants who fit the needs of the study. The process goes on until the researcher has garnered enough participants and data.

## Critical Thinking Challenge 2

1. Describe the steps that could be undertaken to achieve a valid inquiry
2. What may cause you to use alternative or non-traditional research methods?
3. Identify and describe four methods of sampling in qualitative research?

## CONCLUSION

This chapter has discussed various qualitative methods and approaches to data collection underpinned by the interpretive paradigm. It is noted that qualitative methods provide for rigour and in-depth understanding in an inquiry. Though the chapter has highlighted the traditional qualitative methods such as the interview and observations, it has intentionally focused more on examining alternative and non-traditional qualitative methods in data collection, such as the bricolage and distance researching. The chapter has further identified other strategies such as sampling, triangulation and ethical considerations that may be relevant to a qualitative study and thus helps the reader to reach a broad-based understanding as to the location of qualitative research and the alternative methodological demands necessary to apprehend a complex inquiry such as in social sciences where knowledge and terminologies are widely contested.

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## KEY TERMS AND DEFINITIONS

**Bricolage Strategy:** Strives for rigour amid complexity and seeks unfamiliar methods to apprehend lived experiences.

**Qualitative Method:** Research methods that are more descriptive and in-depth, like interviews.

**Research Design:** An overall plan for data collection.

**Sampling:** A subset of a population selected to understand the behaviour or characteristic of a population.

**Triangulation:** Referring to different sources of data and use of varied methods.

**Validity:** In qualitative research it is a summation of efforts made in an enquiry, through honesty, depth, richness, and scope of the data achieved and participants approached.

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# Chapter 31

## Thematic Analysis in Qualitative Research

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### ABSTRACT

*The popularity of qualitative methods in social science research is a well-noted and most welcomed fact. Thematic analysis, the often-used methods of qualitative research, provides concise description and interpretation in terms of themes and patterns from a data set. The application of thematic analysis requires trained expertise and should not be used in a prescriptive, linear, and inflexible manner while analyzing data. It should rather be implemented in relation to research question and data availability. To ensure its proper usage, Braun and Clarke have propounded the simplest yet effective six-step method to conduct thematic analysis. In spite of its systematic step-driven process, thematic analysis provides core skills to conduct different other forms of qualitative analysis. Thematic analysis, through its theoretical freedom, flexibility, rich and detailed yet complex analytical account has emerged as the widely used and most effective qualitative research tool in social and organizational context.*

### INTRODUCTION

In the realm of qualitative research, one of the seldom acknowledged, but most popularly implemented method, is thematic analysis (Boyatzis, 1998; Roulston, 2001; Braun & Clarke, 2006). However, being both dynamic and complex in its analytical process, thematic analysis could be taken as the foundation method in qualitative analysis (Holloway & Todres, 2003). The research analysts have further argued that thematic analysis should be the initial analytic technique for every qualitative researcher to learn, as it forms the plinth for training of basic skills on qualitative analysis method that could be utilised to conduct other forms of qualitative research.

As pointed out by Braun and Clarke (2006) in their research paper on thematic analysis, the qualitative research can be categorised into two groups. The first group consists of the analytical approaches that are related to some theoretical framework, for example grounded theory approach, discourse analysis, narrative analysis, etc. Whereas the second category is free from constraint of theoretical framework, and

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is much more independent and experiential in its approach to analysis. Thematic analysis belongs to this second group of analytic approach. Thus, being independent of theoretical framework, thematic analysis is a divergent, compatible and much more flexible research tool as compared to the other qualitative techniques. Thematic analysis, therefore, help create a rich, detailed, as well a complex account of data set.

Owing to its flexibility, thematic analysis, however, can never be criticised being devoid of scientific temperament. The method of thematic analysis consist of very specific and clear guidelines for its conduction, and these procedural guidelines no doubt give the method a scientific vigour. Braun and Clarke (2006), while propounding the six-step process of analysis in thematic technique, have not only focused on the procedural concepts like “what”, “why”, “when” and “how” of the method concerned but have also specified that the analyst should have clarity and immense technical expertise to carry out the analysis through thematic method. This touch of procedural simplicity mingled with complex technical background gives thematic analysis a detailed yet rich flavour in comparison to other qualitative analysis methods, and henceforth makes it the most popular and widely used method for qualitative data analysis.

Thematic analysis, because of its simple yet rich data analysis process, can be conducted within both kinds of research paradigms- Realist/ Essentialist paradigm and Constructionist paradigm. However, the focus to carry on analysis would be different for different paradigms. The analysis pattern for the first paradigm of Realist/ Essentialist approach should be more subjective in nature as this approach focuses straightforwardly on individual interest, motivation, life meaning and experiences while analysing a data set (Potter & Wetherell, 1987; Widdicombe & Wooffitt, 1995). In contrast, the Constructionist paradigm believes that meaning and experiences are social phenomenon and not completely an individual perspective (Burr, 1995). Therefore, while analysing data within constructionist framework thematic analysis leans more toward the socio-cultural phenomenon and structural context, rather than the subjective factors, from the account provided by the individual data.

However, it is noteworthy that thematic analysis often involves a number of decisions that are not always explicitly mentioned by the researchers. For example, the study by Taylor and Ussher (2001) on discourse analysis provides a good example of explicit thematic analysis research process, whereas, the study by Braun and Wilkinson (2003) on women psychology does not mention much about the explicit decisions involved while conducting the study. One of the example of a ‘bad thematic analysis’ is where the analyst simply put the questions asked, in the interview to the participants, as themes. In this example, no obvious methodological procedure is implemented, or to say no thematic analysis is actually done. To minimise occurrence of this kind of error as specified in the example, it is worth noting and evident that to conduct thematic analysis and to carry on with qualitative research, mention of the decisions taken and answering the probable questions on methods adopted for data collection and analysis is essential for maintaining scientific vigour of the study.

In this context, this chapter on thematic analysis purports to discuss the following points in detail, with the intention to impart better understanding and implementation of knowledge of the method, for the benefit of the young qualitative data analysts:

1. Concept of thematic analysis, and its two major types, viz. Inductive and Deductive.
2. Concept of ‘themes’ and its two major types, viz., Sematic and Latent.
3. Guideline for the six-step process of conducting thematic analysis as advocated by Braun and Clarke (2006), through early study example (Nicholas and McDowall, 2012).
4. Probable challenges of thematic analysis and how to make thematic analysis good.

5. The probable pitfalls to avoid when conducting thematic analysis for a particular data set, through discussing the pros and cons of the method.
6. The applications, implications and recommendations for thematic analysis within qualitative research forte.

## **INTRODUCTION TO THEMATIC TECHNIQUE**

### **Defining Nature of Thematic Analysis**

One of the most popularly used data analysis technique in qualitative research, thematic analysis analyse, identify and finally report the most probable and major themes from the data set. As Boyatzis (1998) specified, thematic analysis further interprets important aspects of research topics and hence, describes research data in an organised and rich format.

Unfortunately, because of its poor acknowledgment and ‘branding’, thematic analysis is not a much ‘named’ method as compared to the other qualitative methods such as narrative analysis, grounded theory method, discourse analysis, etc. It has been observed from the previous literature existing in this area that many used research analysis techniques are essentially thematic in nature but they have been given name of some other analytic technique like discourse analysis, or even content analysis (Meehan, Vermeer, & Windsor, 2000). Even some researches, inspite of using thematic technique have not included it as an identifiable method in the final report; rather those researches have claimed the method as “subjected to qualitative analysis for commonly recurring themes” (Braun and Wilkinson, 2003).

However, this underestimation of such a rich data analysis technique is not only a considerable research methodological failure but it also impede the future researchers to carry out research analysis on this line. The under-recognition of the thematic method, simultaneously, makes the proper evaluation of the research technique difficult (Attride and Stirling, 2001).

### **Types of Thematic Analysis**

In thematic method, the themes and patterns within the data can be analysed in one of the two types or ways of thematic analysis. One is the Inductive or Bottom-up way (e.g. technique used by Frith and Gleeson, 2004), and the other is Deductive or Top-down way (e.g. research techniques used by Boyatzis, 1998; Hayes, 1997).

1. An inductive approach is where the themes identified from data are strongly linked to the collected data set (Patton, 1990). In this sense, an inductive method can be claimed to be data driven. Inductive technique is, therefore, the type of thematic method where the coding process of research data, after its collection via interview or focused group discussion does not try to fit any pre-existing frame or conception of the researcher.
2. Whereas, on the other hand, deductive technique is that type of thematic method where analysis tends to be analyst driven. As deductive technique tends to be more driven by the researcher’s theoretical framework and research interest, hence this technique provides a less rich organisation and description of the overall data, yet it can provide a more detailed analysis of some specific aspect of the data.

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To make this implemented discrimination of the two mentioned types, viz., inductive and deductive type of thematic analysis, Braun and Clarke (2006/ 2008) in their research paper of thematic method have given a good range of examples from previously conducted researches in this area which are quoted below:

*If a researcher was interested in talk about heterosex, and had collected interview data, with an inductive approach they would read and re-read the data for any themes related to heterosex, and code diversely, without paying attention to the themes that previous research on the topic might have identified. For example, the researcher would not look to Hollway's (1989) influential research identifying discourses of hetero sex, and code just for male sexual drive, have/hold or permissive discourse themes. In contrast, with a theoretical approach, the researcher may well be interested in the way permissiveness plays out across the data, and focus on that particular feature in coding the data. What this would then result in is a number of themes around permissiveness, which may include, speak to, or expand on something approximating Hollway's original theme (Braun & Clarke, 2008, p.12-13).*

### **Decisions Involved in Thematic Analysis**

There are a number of decisions or choices that are involved while plunging into thematic analysis. These decisions or choices are often not made explicit, or to say are not discussed about in the method portion while producing the report on analysis. Nevertheless, these decisions need much consideration and to be discussed explicitly to help new researchers understand the analytic process more closely.

The decisions include a number of reflexive questions that are essential part of the research topic. The decisions like time constraint, cost involved to conduct entire research process, applicability and implications of final report to be produced, etc. are all part of these decisions. The researcher just cannot plunge into the thematic process, he/ she has to be well aware of its implementation before analysis begins, and sometimes even before the data collection start. This decision-making is important for the researcher to make the research process more pragmatic and free from any unscientific dogmas prevailing regarding qualitative method.

Though, as stated above, qualitative researchers mostly are unwilling to make these involved decisions explicit while writing their analysis report, yet there exist a few study reports that have discussed about the decisions made on thematic process during its conduction. One of such example, that can be read as a ready reference by the young qualitative/thematic analysis researchers, is the study by Taylor and Ussher (2001) on Sado-Masochism (S & M).

### **Realist/ Essentialist vs. Constructionist Paradigms**

As discussed briefly in the introductory part of the chapter, thematic analysis can be conducted within both the paradigms, viz. Realist or Essentialist and Constructionist. However, the focus and outcome of these two paradigms of analysis is completely different from one another. The determination of the paradigm approach in analysis depends upon the conceptualisation of the research and more specifically on what the research data is actually trying to find out.

When the study is largely focused on subjective factors of participants, for example motivation, personal experiences, emotions, etc., the realist/ essentialist paradigm is the most effective approach for analysing data.



But looking from the constructionist angle the meaning and nature of themes are not always necessarily a subjective phenomenon. The constructionist paradigm view themes experiences and tries to theorize them from social and cultural contexts as well. In this context, it is important to know that the thematic analysis which are constructionist in nature tends to be more 'Latent' in content and sometimes tends to mingle up with thematic discourse analysis also. However, it is worthy of noting that not all constructionist paradigm of thematic analysis is latent in nature.

## **Types of Themes**

In thematic analysis, the decision of theme identification majorly revolves around two levels or to say the main two types of 'themes'. The first level is the *Semantic* or explicit level of themes, and the other is the *Latent* or interpretive level (Boyatziz, 1998). The analysis of themes generally focus on one level at a time.

1. In semantic approach, the data is analysed at an explicit or surface level where the analyst is not looking beyond the statements delivered by the participants of the study. In this sense, the semantic approach of analysis mainly function to organise, summarise and interpret the data pattern with its implications in relation to previous literature resources available (Patton, 1990; Frith & Gleeson, 2004).
2. In contrast, latent approach analyse data at much deeper level of the content. Latent approach tends to identify and examine the underlying meaning, idea, content concept, ideologies, etc. of the data set. Therefore, in latent thematic analysis the interpretive work is much more deep and rigorous in nature that not only involves description but is also justified with theoretical framework.

As discussed earlier, the latent level of themes could be more closely identified within the constructionist paradigm (e.g. Burr, 1995) and at times tend to overlap with thematic discourse analysis (e.g. Singer and Hunter, 1999; Taylor and Ussher, 2001), though not every aspect of this paradigm is latent in nature.

## **Transcription of Data to Generate Themes**

When the researcher is working with data collected through verbal interview (that has been recorded), recorded programmes or any kind of speech given, then it is essential to get that data transcribed before entering the analysis process. In this sense, transcription is nothing but writing down the extracts of collected data as it is, or to say verbatim. The process of transcription may seem time consuming and at times even boring to the research analyst, but it is indeed an excellent way to get oneself well acquainted with the data.

As suggested by Reissman (1993), transcribing data in order to generate themes is the very first step of analysis in the thematic process. It helps the researcher identify codes while writing down the extract that further accelerates the process of generation of themes. In this regard, researcher have also said that transcribing should be taken as "a key phase of data analysis within interpretive qualitative methodology" (Bird, 2005).

However, while transcribing data it is important to keep in mind that it need to be taken down as verbatim which include not only the verbal data but also the non-verbal details like speech pauses, cough-

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ing, facial expression, voice tone, laughing or smiling, etc. Further, the punctuation also need to be taken into consideration while transcribing data for thematic analysis purpose, as advised by Edwards (1993).

It is noteworthy that the time invested in transcription is never wasted; rather it helps the researcher observe the data set closely and develop a better understanding of it. The close attention data needed for being transcribed, further, enforces re-reading or re-listening of data and enhances the interpretive skills of the analyst (Lapadat & Lindsay, 1999).

### **Pros and Cons of Thematic Method**

As it has been stated from very beginning of this chapter, thematic analysis is a relatively straightforward process of qualitative research, especially in comparison with discourse analysis and content analysis. Thematic analysis can be, thus, used even by the researchers who are new in the realm of qualitative research analysis as it does not demand for prior knowledge on its theory and techniques. In spite of being an easy going process, thematic analysis do have some limits that needs to be taken care of by an analyst before entering the analysis process. It is to be kept in mind that the application of thematic analysis requires trained expertise and should not be used in prescriptive, linear and inflexible manner while analyzing qualitative data. It should rather be implemented in relation to research question and data availability.

### **Limitations in Using Thematic Analysis**

The pitfalls of thematic analysis are as follows:

1. Thematic analysis is an exhaustive and time-consuming process.
2. Analysis demands breaking down of data extracts to form themes that might result into loss of context.
3. Thematic reliability is a big concern as wide range of interpretations are involved.
4. Flexibility of thematic analysis, which is otherwise considered as the strength of this method, sometime makes it difficult for the analyst to understand that which aspect of the data is required to focus on.
5. Data discovery and verification may be clashed as new themes keep emerging even at the final phase of data refinement and interpretation.
6. Sense of data continuity is at times disrupted due to rediscovery of new themes during refinement phase.

In spite of its systematic step-driven process, thematic analysis is the most flexible and primarily used data analysis methods in qualitative research. It provides with core skills for conducting different other forms of qualitative analysis. Thematic analysis, through its theoretical freedom, flexibility, rich and detailed yet complex analytical account has emerged as the widely used and most effective qualitative research tool in social and organizational context.

### **Advantages in Applying Thematic Analysis**

The greatest strengths of using thematic analysis in research are, hence, enumerated below:

1. Thematic analysis is an easy to learn method for researchers who are interested in doing qualitative research.
2. It is one of the most flexible method to adopt in qualitative research, and even can be accessible to researchers with very little or no experience in this field.
3. Most applicable for deep-rooted analysis, as thematic interpretation can go beyond experiential surface of data extracts.
4. Allows data interpretation to go beyond phenomenal level and reach broader perspective of significant social context.
5. Analytical process gives scope to work in collaboration and encourages participatory research approach where multiple researcher can work with participant as coherent part of the research.
6. Allows several categories to emerge from data extract as codes to form collated and coherent theme.

### **Challenges in Thematic Analysis**

Thematic analysis have often been criticised by the researchers of quantitative realm as a type of analysis where ‘anything goes’. For example, the very first sentence of Laubschagne’s (2003) abstract says, “For many scientists used to doing quantitative studies the whole concept of qualitative research is unclear, almost foreign, or ‘airy fairy’ - not ‘real’ research”. In spite of all the criticisms, it is noteworthy that qualitative research, viz., thematic analysis comprised of rigorous techniques of data collection and analysis. The British Psychological Society has given some fundamental guidelines for assessing quality of qualitative research analysis, solely for the purpose to curtail the limitations and criticisms as raised time and again by the learned researchers.

### **Cautions to Be Observed for Thematic Analysis**

Braun and Clarke (2006) with the view in mind to make thematic analytical approach more scientific and free from criticisms have given few caution criteria’s in every step of its conduction. These cautions, crucial to be observed to make thematic analysis a good analytic technique, are as follows:

1. The data to be transcribed with level appropriate detailing and the transcription thus made to be checked thoroughly.
2. All data items to be given equal attention at initial coding process.
3. The coding process to be thoroughly inclusive and comprehensive, rather than being an anecdotal approach.
4. Relevant extracts for each theme to be sufficiently collated.
5. Themes, thus generated from initial coding, to be checked and rechecked against each data set.
6. Themes generated need to be inclusive, coherent and consistently relevant with the research topic.
7. During analysis, data need to be interpreted in such a way that it implies to the research, rather than being just an anecdotal paraphrasing.
8. The data collected should match the analysis and the extracts should be able to defend the interpretation thus given.
9. Analysis should be well organised and coherent with the data and research topic.
10. There need to be a balance between the extracts and the analysis.
11. Proper time should be invested to complete all the phases of analysis adequately.

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12. While writing report all the assumptions about the thematic approach need to be specified.
13. The described method of analysis and the interpretive report should be in parity with one another.
14. The reported concepts need to be consistent with the analytical epistemology.
15. Last but not the least, the researcher need to be active throughout the data collection and analytical process so that he/ she is in a position to face any evaluation regarding the research.

### **Applying Thematic Analysis: Guiding Steps**

The conducting stages of thematic analysis are to some extent common with some of the steps followed in qualitative research, so the phases of thematic analysis that will be described here are not all novel in nature. However, as specified by Braun and Clarke (2006), the analysis process begins as soon as the analyst starts to observe dataset minutely (even while collecting data) and search for meaning and pattern in it. Thus, the analyst look for meaning from ideas given by each participant, and interprets the data content in form of specific patterns or themes where “themes are abstract (and often fuzzy) constructs the investigators identify, before, during and after analysis” (Ryan & Bernard, 2000). Unlike statistics driven quantitative researches, where data analysis is generally done at the end, writing and jotting thematic points and search for interpretive meaning in content for further analysis purpose starts from very beginning of the study. Henceforth, in thematic analysis writing begins from its first phase only, where a continuous writing and re-writing of potential codes along with search for final coding and interpretive analysis simultaneously takes place.

However, it is crucial to note, before starting with the six major guiding steps of thematic analysis as given by Braun and Clarke (2006), that these steps are not inflexible rules, which cannot be modified pertaining to the nature of research question and its relation to available data. These prescribed steps are rather the guidelines to help qualitative researchers provide the basics of thematic analysis to begin with. Moreover, analysis is not linear process where the analyst moves from one-step to the other, it is rather a rigorous and recursive process where the research analyst may need to move back and forth as per the data demands, and development of the process takes considerable time (Ely et al., 1997).

### **Phases in Thematic Analysis**

1. **Phase 1 (Getting Familiarised With Data):** The first stage to start with the process of analysis is to get oneself comfortably familiarise with the data available in hand. Now either these data have been collected by the researcher him/ herself or by some professional data collector appointed by the researcher. Once the data is in researcher’s hand the analysis process demands researcher’s/ analyst’s complete active immersion into the analysis process. This active immersion involves reading and re-reading of the data content to search for the meaning, patterns, coding themes, etc. It is important to read the entire data set at least once before begin with search for possible codes and theme patterns. This initial reading aims to help analyst get a clear idea about the theme content, to say is it latent or semantic, or to say is it data driven or theory driven, so on and so forth. As the reading proceeds to re-reading the codes start being generated, the analyst gets more and more familiarise with the data content and the analysis process becomes simplified. Due to these phases of reading and re-reading to become familiarise with every aspect of the data, the qualitative research demands more time in comparison to statistics driven quantitative analysis, and thus it is advised to keep the sample size at minimum level while conducting a qualitative research study.

At this initial phase only it is required to start taking notes and get the points noted down. This process not only helps in getting acquainted with data, but also help getting the analyst ready for the formal coding phase.

2. **Phase 2 (Generating Initial Codes):** Once the process of data familiarisation along with noting down of initial ideas is done stage 2 of thematic analysis begins that aims producing initial codes from data. The initial coding helps identifying the data feature that serve as “the most basic segment, or element, of the raw data or information that can be assessed in a meaningful way regarding the phenomenon” (Boyatzis, 1998). To quote from the original writing of the Braun and Clarke (2006), “The process of coding is the part of analysis (Miles & Huberman, 1994), as you are organising your data into meaningful groups (Tuckett, 2005). However, your coded data differs from the units of analysis (your themes) which are (often) broader. Your themes which you start to develop in the next phase, are where the interpretative analysis of the data occurs, and in relation to which arguments about the phenomenon being examined are made (Boyatzis, 1998).” However, the coding process can be data driven or theory driven according to the nature of research. Working systematically and thoroughly through the entire data set is the key requisite in this phase. The phase demands: a) equal attention of the analyst to each data item, b) identification of interesting features from data item that can be taken as preliminary code, and c) recognising the repeated patterns or themes from the entire data set that can form a particular code group. Coding can be done either manually or through software programming as well (Kelle, 2004; Seale, 2000). In manual process, the coding is done by writing notes on the content of analysis to indicate possible theme patterns and identify data segments. The coding of initial stage can be later matched with the data extract that demonstrate the noted code. However, if using software programme the coding can be done by tagging and naming the sections of the data extract within each data item, and then finally can be collated together by using separate computer files or file cards. During initial coding phase, it is advised to adhere with specified guidelines that (1) the analyst should code as many possible themes/ patterns as possible within the given time limit,(2) coding should be done inclusive of every data extract to prevent the context being lost at the later stage of the analysis (Bryman, 2001), (3) the analyst should code individual data extracts as many possible themes as they seem relevant to, and (4) there should be kept provision for decoding and recoding at later stage as per the analytical need.
3. **Phase 3 (Searching for Themes):** As the data extracts are coded and collated initially, and the analyst is ready with a long list of these initial coding, phase 3 begins with the quest to search for the final themes. This phase directs itself to identify and organise all the potentially relevant themes from the prior collated individual codes. At this stage, the analyst begins to sort and analyse the codes and combine them according to the similarities found to form the central themes. It is noteworthy that during analysing at this stage some initial codes may collate to form the main theme, whereas the others may group as sub-themes, and yet some may require to be discarded. However, there may still exist some codes in the data extract that do not seem to fit in the specified themes, for those codes a miscellaneous category can be created as it is not advisable to abandon any code category at this stage. These miscellaneous themes might hold interesting significance in analysis at the later stage of review. Therefore, this phase of analysis ends with a collection of central themes, sub-themes, and miscellaneous themes that certainly bears significant relation with each other. From here, the analyst starts getting clear sense of the individual category of themes and, thus, gets ready for the review phase.

4. **Phase 4 (Reviewing Themes):** This phase technically consist of two sub stages. In the first sub stage, the generated themes required to be compared and checked in relation to the coded extracts, and in the second sub stage the themes to be reconsidered in relation to the overall data set. This phase of analysis basically operates for refinement of the coded themes generated in the previous phase. During this phase the previously generated themes, sub themes and miscellaneous themes can merge, evolve, sub-merge, break down or collapse through the refinement process. Patton's (1990) dual criteria of internal homogeneity and external heterogeneity for judging categories are noteworthy in this regard. The major objective of this phase in analysis is to make the themes meaningful, indefinable and coherent entities. Thematic map can be generated at and from this phase with carefully monitored analytical process. If the thematic map, which is taken as the accurate representation of the data set, satisfies the research and the researcher's requirement then it is time to move on to the next phase of the analysis. But in case, if the thematic map fails to fit the data set to meet research demands then further reviewing and refining of the coded themes is essential. However, during further review there is every possibility that the analyst may identify some new themes that might seem interesting and he/ she can stat coding and incorporate them as well. Therefore, here at this phase, some cautions needed to be implied to save time, money and the research interest. As with every review the data coding and theme generation can go on to infinity, it is important to note that the research analyst must prevent self from being over enthusiastic towards endless re-coding process. The researcher should keep in mind the research problem in hand and should always stick to the workable hypothesis as per the decided time limit of the research design. It is to be marked that there is no specific guideline to understand when to stop coding themes and start with final analysis, henceforth, the analyst have to be extra cautious and work as per the research demand. However, at the end of this phase the research analyst becomes much confident and thorough with the entire process of coding and interpreting themes.
5. **Phase 5 (Defining, Refining, and Naming Themes):** Once a satisfactory thematic map have been devised, the research analyst enters the next phase of 'defining, naming and further refining of themes'. By the terms used here as 'defining and refining themes' it has been meant that at this stage of analysis the analyst needs to identify the 'essence' or develops understanding of the meaning of each theme as well what the overall themes are about. This stage also sort to determine what data aspect is each theme specifying about. In this phase, it is vital to note that the analyst's job is not only to summarise the content of the data extracts as themes, but also to point out what are most interesting about them and more certainly, why they are important to be collated as themes. It is worth mentioning here, that this phase demands a detailed analysis for each individual theme from entire data set. This is to ensure that the themes are in accord with the overall concept of the data, and more importantly, they are in relation to the research questions. Thus, the analyst need to conduct detailed analysis of individual themes, and consider each theme in relation to the other. The analyst, as part of the refining process, also required to search for and identify the sub-themes, if any present, within the finalised central themes. Sub-themes are nothing but other essential themes present within a central theme, they help breaking down a large complex central theme into much simpler concept. However, at the end of this phase, it is essential that the analyst is able to clearly define what his / her research themes are, and note down those, which are not. From this end stage after final refinement of themes, the research analyst should start brainstorming for giving the themes functional titles or names that are crucial for final analysis part. The theme names should

be short, simple and identifiable such that they are able to give a clear understanding of what the theme is all about.

6. **Phase 6 (Producing Final Report):** Stage 6 begins when the research analyst have satisfactorily worked-out data themes in hand, and then the analyst is all ready to write down the final report. Producing a good thematic report requires expertise as the report, be it written to get published in the journal or made for a course in research assignment, should essentially be able to talk about the complicated research data in most simplified way and also it should give the reader a satisfactory idea about the reliability and validity of the analysis. The purpose of writing report in a comprehensive and simplified technique is to help any reader to understand this substantially time consuming and complex process of qualitative (thematic) analysis in most valid, interesting, coherent, scientific and non-repetitive concise way.

The report, thus, produced should contain sufficient evidence of themes in form of demonstrated data extracts as vivid examples of thematic analytical validity. The extracts chosen as examples should be indefinable as an example of the data theme to do full justice with the research question. However, the report writing needs to be evaluative in nature, rather than just being descriptive. The analyst while producing the final report should keep this in mind that only narrating the data extracts to suit the themes, thus analysed, is not sufficient. The report writing should and must include evaluation in every step to justify the selected themes and how these themes are evident in relation to the research topic and question.

## **ILLUSTRATION**

There exist very few studies on thematic analysis, concerning the arena of work life. One of such, that has been selected for present discussion as a relevant example is the study by Nicholas and McDowall (2012) on work and family life balance, titled as “When work keeps us apart: A thematic analysis of the experience of business travellers”. This study, though conducted with less number of participants, have particularly focused on the experience of professional and personal life balance of the business travellers, under unscheduled conditions, for organisational and economic growth. In present day scenario, it is evidently becoming more and more important to strike a balance between work and family life, and this study by Nicholas and McDowall here have touched the right chord by trying to examine the experiences of “time together and time apart” (Nicholas and McDowall, 2012) of the business travellers (employed and self-employed).

Nicholas and McDowall (2012) in their study recruited eleven (11) participants with spouses and children (8 males and 3 females), through non-probability technique (snowball and word-to-mouth), engaged in business travel as part of their work life for an average of twenty (20) years, and staying away from family for at least five days in a month.

In the study under discussion, the researchers’ employed a semi-structured interview approach with exploratory questions for the data collection purpose. The interview questions, as reported by Nicholas and McDowall (2012) in their study, included specific prompts to facilitate further elaborative discussion on the topic in order to encourage participants bring about a direct and collaborative engagement during collection of data. However, Nicholas and McDowall (2012) reported to use the guidelines given by Smith and Eatough (2007), for conducting qualitative interviews, in formulating the prior interview schedule for the participants’ to collect data.

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The interview, thus, conducted in this discussed study majorly focused on the participants' quality of lifestyle in connection to their time spent together and apart with their family. This was done by asking the participants' to share their life experiences concerning their business travel tenures and how those travels were suited or unsuited, at times, to their work and family perspectives. In this respect, the questions asked to the participants explored the specific aspects of their lives including the instances they enjoyed and/ or found difficult to deal with while they were travelling. Further, the interview also focused on encouraging the participants to share and describe experiences regarding striking balance between work and family when they were returning from business pursuits, or while they were working from home or hometown. Finally, the participants were inquired regarding their ability to cope with work demand and stress, and the family commitments; along with giving some effective suggestions for others to deal with, in this instance, when facing similar situation. However, the final questions (as reported by the researcher in their published work) of the study tried to explore on participants specific experiences of travelling and the instances of the time away from home.

The data were collected elaborately by investing almost sixty (60) to ninety (90) minutes per individual, and according to their convenience in respect of time and place, to make the participants' feel comfortable during interview procedure. The researchers' further reported that they took full precautions while conducting the interviews, which were all recorded and transcribed as verbatim. The probable preliminary information's about the participants' identification such as the name of participants, organisational names, countries visited, etc., were kept confidential and the participants' were also assigned pseudo names by the researchers to ensure anonymity and confidentiality in the study and the published work.

Nicholas and McDowall (2012) in their study have chosen thematic method for analysing the collected data, for its flexible nature (King, 2004) and the critical framework pattern (Willig, 1999). The researchers' have particularly followed the six-step method given by Braun and Clarke (2006) for producing final report on their research article. This study had strictly followed all the norms of thematic technique by continuously reconstructing and reviewing themes with collaboration of the second researcher (noted from the published work) to ensure inclusion of only the strongly emerging themes in the final study report; and thus, disregarding all the themes that consisted of weak evidence and/ or less significance.

Hence, with the application of thematic technique and through observation of every possible precautions needed Nicholas and McDowall (2012) produced their study report that finalise the emergence of four major themes, namely: "Accepting their lifestyle choice and role" (which talked about participants' choice of their profession out of free will, self-discretion, and to some extent financial determinants), "Process of negotiation" (signified participants' requirement for negotiating with their family, friends and organisational/ professional demands to fit into/ between their social roles), "Needing to adapt and adjust" (the most crucial part, in which the participants' talked about their as well their family's need to learn to adapt, adjust and compromise for meeting with professional requirements) and lastly, "Business travellers valued quality of time" (here the business travellers or to say the participants' described about the value of quality time spent with their family, over the quantity of time; participants' shared their experiences of making up for their absence through providing with quality time to their family as being the key secret of balancing personal and professional spheres of their lives).

However, while discussing the study implications the research investigators have claimed that this study through its thematic analytic approach not only have explained the major themes, thus, emerged. Nevertheless, this exemplified study also have facilitated points to further demarcate the types of travelling job natures, viz., one in which there exist a prolonged period of absence and the other like the irregular and unscheduled absence due to business travel (as mentioned in this present one). Nicholas



and McDowall (2012) further proclaimed that the travelling jobs with scheduled and prolonged period of absence were considerably perceived as less stressful in sense of balancing work and family life as they consisted of scheduled reunions at regular intervals in comparison to the brief but unscheduled business travels (Gerstel & Gross, 1982). Hence, the study affirms that business travels demand much more balancing of professional and personal life through adopting methods like negotiation, adjustment (both from individual's and their family's side), compromise and preferring quality time over quantity. This is due to the fact that in this kind of unscheduled travelling ventures there remain no clear dividing line between 'work time' and individual 'leisure time' or family time (Holley et al., 2008).

Thus, this study by Nicholas and McDowall (2012) on balancing work and family life, undoubtedly, had put forward the effective utilisation of the thematic method in understanding the job demands and life experiences of a particular kind of profession and professional experts.

## **PRACTICAL IMPLICATIONS OF THEMATIC ANALYSIS**

It is very difficult to pen down what sort of interpretation thematic analysis implies to, as every qualitative study under thematic analysis has its own uniqueness and the particulars differ from study to study. The research analyst can always search and look for the so far published examples, specifically the thematic version he/ she planning to use for own research purpose, to gain access to hands-on reference work. However, sometimes getting proper and good reference work becomes difficult for the researcher as thematic analysis, though popularly practiced, but is not an often-named analytical technique. Few studies that can serve as ready to use reference by the future thematic analyst are, thus, mentioned herewith: Ellis and Kitzinger, 2002, study on gender equality of age for having sex; Kitzinger and Willmott, 2002, a study on women's experience of polycystic ovarian syndrome; Toerien and Wilkinson, 2004, study on women's experience of body hair removal; and Frith and Gleeson, 2004, study on (inductive thematic analytic method used) perceived body image of men in relation to clothing (check the reference part in this article for detail specifications of these studies). The mentioned studies are good examples to learn from and all of them are majorly conducted in social context.

While applying thematic analysis, it is important to mark that the analytical implications need to be grounded in, and at the same time need to go beyond the data surface. This understanding should be applied even in case of a semantic level analysis. In this regard as directed in Braun and Clarke's (2006) article on conducting thematic analysis the analyst, at the end phase of research, need to explain few relevant questions in relation to thematic analytical implications that include: "what does this theme mean?, what are the implications of this theme?, what conditions are likely to have given rise to it?, why do people talk about this thing in this particular way? and what is the overall story the different themes reveal about the topic?" These questions on thematic implications can be easily explained once the analyst has confident idea regarding the thematic map (as discussed in the previous section on guiding steps of thematic analysis).

## **CONCLUSION AND RECOMMENDATIONS**

Before implementing thematic analysis into any data set for research purpose, it is worthwhile to understand why one would go for thematic analysis in qualitative research. Apart from being a flexible and

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researcher friendly method that can help as a start up to qualitative research, thematic analysis is well comprised with scientific steps and organised base of analytic element that makes the process a highly recommended method in qualitative research domain (Braun & Clarke, 2006; Crawford et al., 2008). However, this method is most appropriate even when the researchers are interested deriving themes and, evaluate deeper level thoughts and meaning from data set that has been collected from more than one participant.

Thematic analysis, henceforth, provides the research analysts with the opportunity to go beyond the words that has been stated by the participants during data collection, and search for the more deep and unambiguous meaning in terms of themes. Simultaneously, by applying thematic analysis, the researcher can gain better understanding of the participant's attitude, vision, feeling and thought reflections as this method not only focuses on the verbal documents, but also gives equal emphasis on the non-verbal expressions demonstrated by each participant during data collection time.

The themes, thus, developed act as the clue to further connect with the original data and help form the basis for final interpretation. Regarding this nature of thematic analysis, Namey et al. (2008) have rightly pointed out that thematic analysis "May include comparing the relative frequencies of themes or topics within a data set, looking for code co-occurrence or graphically displaying code relationships."

However, to conduct thematic analysis a large amount of data is required. As suggested by Joffe and Yardley (2004), thematic analysis should "describe the bulk amount of the data". This is important because though a single statement is enormously significant in thematic process, but only a few statement cannot depict or narrate the diverse relationship of data concern in terms of meaningful cause and effect phenomena. Further, the data need to be large in amount for analysis to do full justice with the research topic, especially when more participants are involved in the data collection process. In this regard, Blacker (2009) have specified that a rich, detailed and large amount of data helps getting "the predominant and important themes" from the process of analysis.

In the thematic analysis process, the data is ideally analysed without being influenced by the already existing themes and this further ensures an analysis of participant's views from the data set in most unbiased manner. To be more specific, this unbiased attitude towards the analytic process helps formulating themes, which essentially contribute towards understanding and better evaluation of ideas, and issues that serve as the major research concern.

In this sense, as already mentioned in the chapter discussion, every single statement of the research participant is considered as valid for analytic purpose to identify the concerned concepts. These concepts are, thus, important to understand the views and underlying meanings as conveyed by the participants in a hypothetical way until they are confirmed through final analytical process of evaluation and interpretation.

Thematic analysis, as pointed out several times in this chapter discussion, is one of the most flexible and widely used method in research for qualitative data analysis. The method provides a good hold in the realm of qualitative research even to the young/ new researchers. It is one of the most effective and appropriate method to implement when the study samples are pre-determined and pre-defined in research. Thematic analysis is equipped with the flexibility to start data analysis from the very beginning of the study, even during the time of data collection. Further, this method provides flexibility to approach research analysis in both the ways, viz., inductive and deductive (Frith and Gleeson, 2004; Hayes, 2000; Halldorson, 2009).

Therefore, thematic analysis is a comprehensive tool for the researchers to analyse data set in terms of identifying the evolving themes from the content provided by the participants or gathered through other sources like news articles, speech delivered, etc. during the time of data collection (Hayes, 1997).

As the application of thematic analysis has wide scope, its interpretive potential becomes infinite with availability of rich data content. It is possible to link and compare data content in terms of participant's concepts and opinions recorded in different situations and at different times. Thus, thematic method provides an elaborated and diverse range of interpretation during in-depth analysis process.

## **CRITICAL QUESTIONS**

1. What is the difference between code and theme?
2. Which particular type is more applicable, latent theme or semantic theme?
3. Is there any pre-requisite for data exists to be applicable for thematic analysis?
4. What type of research questions are suitable for thematic analysis?
5. How to understand that the thematic analysis done is a good one?

## **SUGGESTED ANSWERS**

**Answer 1:** Theme is the common and recurring pattern of idea across the dataset, it tends to identify and describe various facets of a single idea from dataset. Whereas, code is more specific than theme. Code tend to describe a particular idea at a time, and several codes combine together to form a theme in the process of thematic analysis.

**Answer 2:** Thematic analysis offers diversified evaluation and is extremely flexible in approach. Hence, there is no better or worse theme type, but according to the purpose they serve researcher can choose which one to implement in his/ her study. If the researcher is looking for a more realistic and descriptive evaluation of participant's experience then he/ she may choose semantic type of analysis. On the contrary, if the researcher is prone towards a constructionist type of understanding regarding any social phenomena then latent type of analysis would be more appropriate.

**Answer 3:** There exists no pre-requisite for data to be applicable for thematic analysis. Thematic analysis, because of its flexible nature, can be used for analysing most types of qualitative research data collected by various means like interview, focused group discussion, qualitative surveys, stories, diaries and news articles, so on and so forth.

**Answer 4:** Thematic analysis is applicable for addressing most types of qualitative research questions that includes personal experiences, individual opinions, social and community based practices and belief system, individual thought process and decision-making, etc.

**Answer 5:** The guided step-by-step process given by Braun and Clarke to follow while conducting thematic analysis is the most effective way to ensure that one has practiced a good thematic analysis. Along with that the basic cautions given for thematic process to be kept in mind during analysis time further ensures that no error has been committed. However, in case of young researchers, it is advisable to read the literatures available before initiating the analysis process, and if possible take help from an expert supervisor from this field whenever required to minimise room for doubts regarding any phase during analysis.

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## **KEY TERMS AND DEFINITIONS**

**Coding:** Coding, in qualitative research, is the initial phase of analysis which facilitate the process of theme generation by breaking down and categorising data statements into different levels.

**Constructionist Approach:** Constructionist paradigm is that kind of research approach which is prone toward understanding the social and cultural perspectives for any specified phenomenon.

**Deductive Thematic Analysis:** Deductive thematic analysis is the type which is more analyst driven, and therefore, it tends to fit into the analyst's or researcher's pre-existing research interest.

**Inductive Thematic Analysis:** It is a type of thematic analysis that is strongly linked with the data, and hence does not try to fit into the pre-existing concept of the research or the researcher. Inductive thematic analysis is, thus, much more data driven in nature.

**Latent Theme:** Latent theme looks into the deeper level of causal relations from a given set of data. Thus, it deals with the underlying meaning, concepts, and ideas of the specified data statements.

**Qualitative Research:** Qualitative research is the kind of research which is exploratory in nature and seeks to understand the underlying conditions of any incident, event or phenomenon by applying techniques like interview, opinion survey, etc.

**Realist Approach:** It is the type of research approach in the qualitative field that is more keen in exploring the subjective factors like emotion, motivation, personal experiences, etc.

**Semantic Theme:** Semantic theme is the surface level or the explicit level theme, which is mainly concern with organising and summarising theme from the data statements in relation to the available research literatures.


**Transcription:** Transcription is the process of putting and arranging verbatim records or interviews into written form to suit the purpose of qualitative research.

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## Chapter 32

# Learner Perception of Using Case Study Method as a Teaching Method in Higher Education

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### ABSTRACT

*The aim of the study is to explore learners' perception of case study method within the context of a Degree in Infant Education. The research is carried out at Salamanca University during the academic year 2017-2018. In order to achieve the goal of the research, a quantitative study is employed. The sample of the research is composed of 77 learners enrolled in the compulsory subject School Organization. To operationalize the variables and collect data researchers use a questionnaire. Analyzing the results, it is highlighted that most learners emphasize the benefits of case study method to be involved in the real context of a classroom setting, and to contribute to the development of different skills such as communication, problem solving, decision-making, organizing and planning, analytical thinking, conflict resolution, negotiation, coordination, cooperation, flexibility, tolerance, and respect. They state that it is a fantastic experience to put into practice the knowledge previously acquired. This research points out how the case study method maximizes the learning experience.*

### INTRODUCTION

The intent of this research is to contribute to the overall knowledge base about the use of case study method as a teaching method in higher education. Different authors (Leenders, 2001; Mauffette-Launders, et al., 2005; Popil, 2011) consider that a case is normally a description of a real situation, which commonly implies a decision, a challenge, an opportunity, etc., faced by a person or a group of people in

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an organization. A case allows learners to step metaphorically into the shoes of decision-makers and contribute to the development of decision-making skills.

On the other hand, as Herreid, Schiller, Herreid, & Wright (2011) points out the case study teaching method can be defined as a highly adaptable style of teaching which favours the development of different skills as analytical skills, critical thinking, and implies problem-based learning. It can be defined as an active teaching strategy, which has the potential to improve the quality as well as quantity of students' learning (Razali & Zainal, 2013). Dahlkvist (2007) adds that the case study method allows learners to face several situations and problems related to their future work, being more prepared and having a more stable ground with knowledge to face similar situations when they begin to work. As Tal (2010) states case study can be defined as a meta-skill that integrates cognitive perceptions, self-regulation skills, and interpersonal relationships with learners and teachers. It is also perceived as a cyclical process that includes advance planning, implementation, assessment during the implementation, and a final evaluation that takes into account factors related to the learners and their environment, intended to bring about progress in the activities carried out for the learning and emotional well-being of the learners in the class (pp.143-144). On the other hand, Lee & Choi (2008) add that case study is a teaching method which requires learners to actively participate in real or hypothetical problem solutions, reflecting the kinds of experiences naturally encountered in the discipline under study (pp. 936-937)

There are many international researchers that have carried out several studies that highlight how case study method can be considered a bridge between theory and practice (Bolinger, Herold, Ramnath, & Ramanathan, 2011; Davis & Wilcock, 2003; Habasisa & Hlalele, 2014; Mayo, 2004; Olkum, Altun & Deryakulu, 2009). A didactic and pedagogical alternative in classroom (Minniti, et al, 2017) that allows bringing real situations into classrooms, establishing a link between real life situations or problems, and classroom and learning environment (Hackney, McMaster & Harris, 2003; Minniti, et al, 2017; Olkum, Altun & Deryakulu, 2009; Roberts, 2001; Wang & Wang, 2011). Several studies have proved the positive impact of the case study method as a teaching method to promote and improve learners' academic performance and their interest towards the subject (Bonney, 2015; Habasisa & Hlalele, 2014; Muraya & Kimamo, 2011; Schunk, Meece & Pintrich, 2014; Swanson & Morrison, 2010), and to apply students' previous knowledge to inexperienced real situations (Gray et al., 2006; Watson and Sutton, 2012).

As Minniti, et al. (2017) point out the case study method is a pedagogic strategy constructivist approach that provides immersive experience. An experience in which the roles of the protagonist of the teaching-learning process, students and teachers, are relevant for the success of the experience. Teachers play significant and essential roles as learning guides and educational facilitators, advisors, and counselors (Jernquist & Svalenius, 2007; Razali and Zainal, 2013; Scheepers & de Villiers, 2000; Wright & Grenier, 2009), encouraging the students to participate in the discussion of the case studies. Teachers are actively involved in the previous preparation and in the development of the experience, encouraging students to participate in the discussion of the case study (Hege, Ropp, Adler, et al., 2007). Social constructivism is the conceptual framework on which case study method is based, promoting student-centred learner (Bareiss & Griss, 2008; Jianmin & Jian, 2010) where students are placed at the centre of the teaching-learning process, constructing knowledge, having an active and relevant role (Austin & Sonnevile, 2013; Gray et al., 2006; Markulis & Geneso, 2007; Roberts & Ryrie, 2014; Watson and Sutton, 2012), a more dynamic role in learning (Afsouran, et al., 2008) that help them to receive more awareness and knowledge of the situation or problem in focus, and taking more control over their learning which can increase their motivation towards the subject and can improve their academic results (Mingze & Chiang, 2015; Murray-Nseula, 2012).

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Apart from making students' learning proactive, the researches about the implementation of the case study method as a teaching method have also concluded how it favours the improvement and development of problem-solving skills, cognitive skills, oral and written communication skills (Badger, 2010; Bonney, 2015; Razali and Zainal, 2013).

The current study presents the findings of a quantitative research about the use of case study method as a teaching method, an experienced developed during the second semester of the first year of the Degree in Infant Education. The case studies are developed in the second semester during academic year 2017-2018. They are about different aspects of the subject School Organization; they specifically deal with bullying, inclusive education, education funding, homework, parent involvement, and student health. The students are divided into different groups (maximum seven students) and are given three weeks to prepare the case. Each group has to analyse and discuss a specific case study, previously assigned by the teacher. The experience implies individual preparation; small group discussion and written analysis, a report in an adequate structure according to the specific guidelines provided by the teacher (the report was writing in Spanish, between 5-7 pages in length); and class presentation and discussion.

In the following sections of the paper, it is provided an overview of the quantitative study developed. First of all, the researchers refer to the research method used, to the main objective, to the population ( $n = 77$ ) and sample ( $n = 70$ ), to the instrument used to collect the data (a questionnaire divided into four sections), to the way in which data were collected as well as to the descriptive analyses done. Secondly, the researchers present the results obtained from the descriptive analyses. Finally, they show the main conclusions of the study according to the learners' opinions towards the experience.

## **METHOD**

The aim of the study is to explore the learners' perception of case study method within the context of the Degree in Infant Education at Salamanca University. Researchers employ a quantitative study (Creswell, 2005, 2009; Hernández, Fernández & Baptista, 2010; Williams, Tutty, & Grinnell, 2005), an ex-post-facto non-experimental design since researchers do not have any control over independent variables. They only recorded the measurements since the phenomenon occurred naturally (Edmonds & Kennedy, 2016). Kerlinger (1986) points out that it is a systematic empirical inquiry in which the scientist does not have direct control of independent variables because their manifestations have already occurred or because they are inherently not manipulable (p. 348). Cooper & Schindler (2001) define it as a method of teasing out possible antecedents of events that have happened and cannot, therefore, be controlled engineered or manipulated by the investigator (p.136). Hernández, Fernández & Baptista (2010) add that researchers only observe and analyse the events as they happen in their natural context without having any control over the independent variables; they only record the measures without manipulating them deliberately. If we translate literally the expression ex-post-facto, it generally means 'from what is done afterwards (Cohen, Manion & Morrison, 2007). If we focus on the context of social and educational research, then it can mean 'after the fact' or 'retrospectively', so it is referred to those studies which investigate possible cause-and-effect relationships by observing an existing condition or state of affairs and searching back in time for plausible causal factors (Cohen, Manion & Morrison, 2007, p. 264). Researchers explore a natural group that it is already formed and it is composed of the learners enrolled in the compulsory subject School Organization.

According to the classification of empirical studies within non-experimental research (Arnal, Rincón & Latorre, 1994), this study addresses a descriptive study, a survey method, using techniques of descriptive analysis. It allows investigator to meet the objective in descriptive terms, compare and establish the relationship between variables after systematic data gathering according to a design previously established by the researchers to guarantee the rigour of the data obtained.

The study is developed in the three phases pointed out by Buendía, Colás, & Hernández (1997). First of all, researchers establish the objective of the study. Secondly, it is carried out the methodological phase in which the sample is selected, and investigators decide the variables of the questionnaire. Finally, they develop the statistical and conceptual phase in which it is made the register coding and data analyses to obtain the results and draw the main conclusions of the study.

## **Participants**

The population of the research comprises 77 students. All of them are enrolled in the subject School Organization in the academic year 2017-2018, a compulsory subject taught at the second semester of the first year of the Degree in Infant Education that involved a total of 6 ECTS. According to the European Commission (2015) ECTS is a learner-centred system for credit accumulation and transfer, based on the principle of transparency of the learning, teaching and assessment processes (p.10). ECTS credits express the volume of learning based on the defined learning outcomes and their associated workload (European Commission, 2015, p.10). One credit corresponds to 150 hours of work, ECTS is thus based on a full student workload, 40% corresponds to contact hours, timetabled time in class, and 60% to non-contact activities, non-timetabled student work outside class. The subject School Organization runs for 15 weeks, from the 5<sup>th</sup> February till the 31<sup>st</sup> May. Learners attend to lessons 4 hours a week. The quantitative sample of the study is composed of 70 learners. Of the 70 cases, the majority of them are women (88.6%,  $n = 62$ ), and only 8 are men (11.4%). The participants range in age from 18 to 30, with an average age of 19.77 ( $SD = 2.34$ ). Most participants (67.1%,  $n = 47$ ) have graduated High School, and 32.9% ( $n = 23$ ) have already finished Vocational Education. The quantitative sample of the study is a probability sample since all learners in the population have the same probability of being chosen and included in it. It is sufficiently representative in order to reach conclusions that can be generalized to a larger population.

## **Instrument**

The instrument used to operationalize the variables and collect data is a questionnaire that is composed of 34 items and covers four areas: (1) analysis of the case study method; (2) students' perceptions of assessment in case study method; (3) teacher and learner's role; (4) strengths and weaknesses of the case study method as teaching method. Depending on the nature of the item, the questions used in the survey are of two types: Likert five-points scale items, and open-ended responses in the last area of the questionnaire.

The first section of the survey, analysis of the case study method, contains a total of 17 items. Learners are asked if the case studies done had reflected real school and classroom situations (Item 1). If case study method as a teaching method had positively changed their perspective about their future work as teachers (Item 2). If the use of case study method allowed them to understand better what being a teacher and part of the organization of a school entails (Item 3). If the use of case study method had allowed

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them to learn from their classmates (Item 4). If the discussion of case studies had provided them multiple perspectives (Item 5). If case study method as a teaching method had helped them to understand better the contents of the subject School Organization (Item 6). If the case studies discussed during the lessons had been relevant for the subject School Organization (Item 7). If the use of case study method had allowed them to feel more capable of dealing with school and classroom problems in the future (Item 8). If the case studies developed could help them in future teaching situations (Item 9). If case study method had promoted critical thinking (Item 10). If case study had contributed to the development of analytical thinking (Item 11). If case study method let them develop problem solving skills (Item 12). If case study method had favoured active learning (Item 13). If case study method had facilitated cooperative and collaborative learning (Item 14). If case study method had enhanced team work (Item 15). If case study had allowed learning by doing (Item 16). If the case study method maximizes learning experience (Item 17). Participants' answers are coded using the Likert five-points scale from totally ineffective to totally effective. Totally ineffective is coded as 1, ineffective as 2, neither effective nor ineffective as 3, effective as 4, and totally effective as 5.

The second section of the questionnaire, students' perceptions of assessment in case study method, is comprised of 7 items. Students are asked if they knew from the beginning how they would be assessed (Item 18). If the teacher told them in advance when and on what they would be assessed (Item 19). If they knew how the practice would be marked (Item 20). If the assessment had been appropriate to the experience developed (Item 21). If the assessment had allowed opportunities for them to show the extent of their learning (Item 22). If the assessment had allowed measurement the advance of their learning (Item 23). If the assessment had rigorously tracked their progress in the experience developed (Item 24). Learners' answers are coded using the Likert five-points scale from strongly agree to strongly disagree. Strongly disagree is coded as 1, disagree as 2, neither agree nor disagree as 3, agree as 4, and strongly agree as 5.

The third section of the questionnaire, teacher and learner's role, is composed of 10 items. Learners are asked if the teacher had encouraged them to participate in the task (Item 25). If the teacher had guided them about how they may proceed in the case study (Item 26). If the teacher had helped them during the development of the case study (Item 27). If the teacher had guided and had mediated the process (Item 28). If the feedback provided by the teacher had been helpful for improving the quality of the case studies analysed (Item 29). If they had showed respect for their classmates and that contribute to the quality learning environment (Item 30). If they had been actively involved in the development of the case study (Item 31). If they had participated more in that task than in other practice lessons (Item 32). If they had had autonomy in the planning of the case study process (Item 33). If they had good organizational and time management skills (Item 34). Students' answers are coded using the Likert five-points scale from strongly agree to strongly disagree. Strongly disagree is coded as 1, disagree as 2, neither agree nor disagree as 3, agree as 4, and strongly agree as 5.

The last first section of the questionnaire contains an open-ended question about the strengths and weaknesses of the case study method as a teaching method.

The researchers calculated the Cronbach's alpha, the alpha coefficient of reliability, to measure the internal consistency of the instrument. The alpha coefficient for the thirty-four items is .919, a high coefficient that suggests that the items have high internal consistency (Shevlin, Miles, Davies, & Walker, 2000).

*Table 1a. Results of the Cronbach's alpha*

Case Processing Summary			
		N	%
Cases	Valid	70	100.0
	Excluded <sup>a</sup>	0	.0
	Total	70	100.0

*Table 1b. Results of the Cronbach's alpha (continued)*

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.919	.929	34

## Data Collection and Analyses

The questionnaire is conducted four months after the subject began, at the end of the second semester of the academic year 2017-2018. The researchers create the questionnaire through the online app Form that belongs to the free cloud-based storage service Google Drive. Students accessed to it through the link shared on Studium, the Virtual Learning Environment (VLE) designed and virtualised for the course School Organization. It is established a period of a week to fill in it. Once the fieldwork is finished and data are collected, the investigators order them and prepare the register coding to process them in an ad hoc file. After creating the data matrix, they introduce and debug data, and carry out the analyses and statistical tests using the statistical software SPSS.

## RESULTS

The quantitative data collected are analysed using descriptive statistics to demonstrate an overall perception of learners to the four areas covered in the questionnaire: (1) analysis of the case study method; (2) students' perceptions of assessment in case study method; (3) teacher and learner's role; (4) strengths and weaknesses of the case study method as a teaching method.

### Analysis of the Case Study Method

The findings obtained in the first part of the questionnaire, analysis of the case study method as a teaching method (Table 1), are, in general, quite positive. Most participants consider that the case studies done are effective (72.9%,  $n = 51$ ) and totally effective (17.1%,  $n = 12$ ) to reflect real school and classroom situations (Item 1). Moreover, the majority of them point out that they are effective 58.6% ( $n = 41$ ) and totally effective 32.9% ( $n = 23$ ) to positively change their perspective about their future work as teacher (Item 2). With regard to the dependent variable that refers to the effectiveness of case study method to allow students to understand better what being a teacher and part of the organization of a school entails

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(Item 3), 78.6% (n = 55) consider that it was effective and 15.7% (n = 11) totally effective. The results also show positive evidences of the effectiveness of case study method to learn from their classmates (Item 4) since 61.4% (n = 43) state that it is effective, 32.9% (n = 23) totally effective, just the same percentage of learners 2.9% considered that it was neither effective of ineffective, or ineffective. Regarding the results of the dependent variable that refers to the effectiveness of the discussion of cases studies to provide them multiple perspectives (Item 5), 38.6% (n = 27) point out that they are totally effective, 34.3% (n = 24) effective, 14.3% (n = 10) neither effective nor ineffective, 8.6% (n = 6) ineffective and 4.3% (n = 3) totally ineffective. Participants are also asked to assess the effectiveness of case study method as a teaching method to help them to understand better the contents of the subject School Organization (Item 6), in that case, 50% (n = 35) consider that it is effective, 34.3% (n = 24) totally effective, 11.4% (n = 8) ineffective and 4.3% (n = 3) neither effective nor ineffective. Regarding the findings about the relevance of the case studies discussed for the subject School Organization (Item 7), 45.7% (n = 32) assess them as effective, 42.9% (n = 30) as totally effective, 8.6% (n = 6) as neither effective nor ineffective, and 2.9% (n = 2) as ineffective. The results also highlight the effectiveness of case study method to allow students to feel more capable of dealing with school and classroom problems in the future (Item 8). In that case, 51.4% (n = 36) assess it as effective, 28.6% (n = 20) as totally effective, 14.3% (n = 10) as neither effective nor ineffective, and 5.7% (n = 4) as ineffective. Similar results are obtained when the students assess how the case studies developed can help them in future teaching situations (Item 9). 54.3% (n = 38) assess them as affective, 28.6% (n = 20) as very effective, 14.3% (n = 10) as neither effective nor ineffective, and 2.9% (n = 2) as very ineffective. Referring to the dependent variable that refers to the possibilities case study method to promote students' critical thinking (Item 10), the results are very positive. 67.1% (n = 47) state that it is effective and 24.3% (n = 17) totally effective, just 8.6% (n = 6) of the participants of the research assess it as neither effective nor ineffective. The students are also asked to assess the possibilities offered by the case study method to contribute to the development of their analytical thinking (Item 11). The results reveal that 50% (n = 35) think that it is effective, 34.3% (n = 24) very effective, 5.7% (n = 4) neither effective nor ineffective, 7.1% (n = 5) ineffective, and 2.9% (n = 2) totally ineffective. The students also evaluate the effectiveness of case study method to let them develop problem-solving skills (Item 12). The results obtained show that 62.9% (n = 44) assess it as effective, 25.7% (n = 18) as very effective, 7.1% (n = 5) as neither effective nor ineffective and 4.3% (n = 3) as ineffective. Similar results were obtained when they evaluate case study method to favoured active learning (Item 13). 54.3% (n = 38) point out that it is effective, 28.6% (n = 20) very effective, 11.4% (n = 8) neither effective nor ineffective, and 5.7% (n = 4) ineffective. The results are even better when they assess the case study method to facilitate cooperative and collaborative learning (Item 14) and to enhance teamwork (Item 15). 70% (n = 49) and 74.3% (n = 52) assess it as effective, 21.4% (n = 15) and 15.7% (n = 11) as very effective, and 8.6% (n = 6) and 10% (n = 7) as neither effective nor ineffective. Regarding the item about if the case study method allows learning by doing (Item 16). 47.1% (n = 33) assess it as effective, 31.4% (n = 22) as totally effective, 12.9% (n = 9) as neither effective nor ineffective, 5.7% (n = 4) as ineffective and just a 2.9% (n = 2) as totally ineffective. Finally, they are asked to evaluate if case study method had maximized learning experience (Item 17). 55.7% (n = 39) believe that it is effective, 27.1% (n = 19) very effective, 10% (n = 7) neither effective nor ineffective, 4.3% (n = 3) ineffective and 2.9% (n = 2) totally ineffective.

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*Table 2. Statistics of the dependent variables of the analysis of the case study method*

Items	Totally Ineffective	Ineffective	Neither effective nor ineffective	Effective	Totally Effective	$\bar{x}$	Sx
Item 1			10% (n = 7)	72.9% (n = 51)	17.1% (n = 12)	4.07	.520
Item 2			8.6% (n = 6)	58.6% (n = 41)	32.9% (n = 23)	4.24	.600
Item 3			5.7% (n = 4)	78.6% (n = 55)	15.7% (n = 11)	4.10	.455
Item 4		2.9% (n = 2)	2.9% (n = 2)	61.4% (n = 43)	32.9% (n = 23)	4.24	.647
Item 5	4.3% (n = 3)	8.6% (n = 6)	14.3% (n = 10)	34.3% (n = 24)	38.6% (n = 27)	3.94	1.128
Item 6		11.4% (n = 8)	4.3% (n = 3)	50% (n = 35)	34.3% (n = 24)	4.07	.922
Item 7		2.9% (n = 2)	8.6% (n = 6)	45.7% (n = 32)	42.9% (n = 30)	4.29	.745
Item 8		5.7% (n = 4)	14.3% (n = 10)	51.4% (n = 36)	28.6% (n = 20)	4.03	.816
Item 9	2.9% (n = 2)		14.3% (n = 10)	54.3% (n = 38)	28.6% (n = 20)	4.06	.832
Item 10			8.6% (n = 6)	67.1% (n = 47)	24.3% (n = 17)	4.16	.555
Item 11	2.9% (n = 2)	7.1% (n = 5)	5.7% (n = 4)	50% (n = 35)	34.3% (n = 24)	4.06	.976
Item 12		4.3% (n = 3)	7.1% (n = 5)	62.9% (n = 44)	25.7% (n = 18)	4.10	.705
Item 13		5.7 (n = 4)	11.4% (n = 8)	54.3% (n = 38)	28.6% (n = 20)	4.06	.796
Item 14			8.6% (n = 6)	70% (n = 49)	21.4% (n = 15)	4.13	.536
Item 15			10% (n = 7)	74.3% (n = 52)	15.7% (n = 11)	4.06	.508
Item 16	2.9% (n = 2)	5.7% (n = 4)	12.9% (n = 9)	47.1% (n = 33)	31.4% (n = 22)	3.99	.970
Item 17	2.9% (n = 2)	4.3% (n = 3)	10% (n = 7)	55.7% (n = 39)	27.1% (n = 19)	4.00	.901

### **Students' Perceptions of Assessment in Case Study Method**

The findings of the second section of the questionnaire, students' perceptions of assessment in case study method (Table 2), highlight that the learners agree or strongly agree with the different statements, which make up this part of the test. Specifically, 47.1% (n = 33) strongly agree, and 37.1% (n = 26) agree that they have known from the beginning of the course how the teacher would assess the case studies discussions (Item 18). Moreover, they agree (35.7%, n = 25) and strongly agree (45.7%, n = 32) that the teacher has specifically told them in advance when and on what they would be assessed (Item 19)

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and how the practice would be marked (Item 20; 47.1%, n = 33) agree, and 40%, n = 28 strongly agree). Regarding the results about if the assessment had been appropriate to the experience developed (Item 21) 55.7% (n = 39) agree and 30% (n = 21) strongly agree. Similar results are obtained when they assess if the assessment had allowed measurement the advance of their learning (Item 23) and if the assessment had rigorously tracked their progress in the experience developed (Item 24). In that case, 55.7% (n = 39) and 52.9% (n = 37) agree, and 32.9% (n = 23) 38.6% (n = 27) strongly agree with these ideas. Finally, the results obtained in the item about if the assessment had allowed opportunities for them to show the extent of their learning (Item 22) show that 42.9% (n = 30) agree and 45.7% (n = 32) strongly agree.

*Table 3. Statistics of the dependent variables of the students' perceptions of assessment in case study method*

Items	Strongly Disagree	Disagree	Neither agree or disagree	Agree	Strongly Agree	$\bar{x}$	Sx
Item 18		10% (n = 7)	5.7% (n = 4)	37.1% (n = 26)	47.1% (n = 33)	4.21	.946
Item 19		7.1% (n = 5)	11.4% (n = 8)	35.7% (n = 25)	45.7% (n = 32)	4.20	.910
Item 20	1.4% (n = 1)	2.9% (n = 2)	8.6% (n = 6)	47.1% (n = 33)	40% (n = 28)	4.21	.832
Item 21	1.4% (n = 1)	5.7% (n = 4)	7.1% (n = 5)	55.7% (n = 39)	30% (n = 21)	4.07	.857
Item 22		4.3% (n = 3)	7.1% (n = 5)	42.9% (n = 30)	45.7% (n = 32)	4.30	.787
Item 23			11.4% (n = 8)	55.7% (n = 39)	32.9% (n = 23)	4.21	.635
Item 24			8.6% (n = 6)	52.9% (n = 37)	38.6% (n = 27)	4.30	.622

### **Teacher and Learners' Role**

In this section, we present the results of the third part of the questionnaire that refers to teacher and students' roles during the development of case studies (Table 3). Learners show their agreement or disagreement with a series of items in which they are asked if the teacher had encouraged them to participate in the task (Item 25). If the teacher had guided them about how they may proceed in the case study (Item 26). If the teacher had helped them during the development of the case study (Item 27). If the teacher had guided and had mediated the process (Item 28). If the feedback provided by the teacher had been helpful for improving the quality of the case studies analysed (Item 29). If they had showed respect for their classmates and that contribute to the quality of the learning environment (Item 30). If they had been actively involved in the development of the case study (Item 31). If they had participated more in that task than in other practice lessons (Item 32). If they had had autonomy in the planning of the case study process (Item 33). If they had good organizational and time management skills (Item 34).

Regarding the dependent that refers to the attitude of the teacher to encourage their participation in the experience (Item 25), 58.6% (n = 41) agree and 34.3% (n = 24) strongly agree with that statement,



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just 7.1% (n = 5) neither agree or disagree with it. On the other hand, 58.6% (n = 41) and 28.6% (n = 20) agree and strongly agree, respectively, with the idea that the teacher has indicated them how they may proceed in the development of the case studies (Item 26). Similar results are obtained when they assess her role to help them during the development of the experience (Item 27). In that case, 54.3% (n = 38) agree and 31.4% (n = 22) strongly agree, just 11.4% (n = 8) and 2.9% (n = 2), respectively, neither agree or disagree, or disagree with that statement. They are also asked about the role of teacher to guide and mediate the process (Item 28). In that case, half of the participants agree (n = 35) and 38.6% (n = 27) strongly agree with that idea. Regarding the results of the item that refers to the role of the feedback provided by the teacher to improve the quality of the case studies analysed (Item 29), 48.6% (n = 34) agree and 37.1% (n = 26) strongly agree with that perception. The students also show their agreement or disagreement with the item that refers to their attitude and role during the development of the experience. Referring to the statement of if the respect showed towards the work and opinions of their classmates had contribute to the quality learning environment (Item 30), 52.9% (n = 37) agree and 30% (n = 21) strongly agree with it. On the other hand, 42.9% (n = 30) and 37.1% (n = 26) agree and strongly agree with their active role during the development of the case studies (Item 31). Similar results were obtained when they assessed if they have participated more in that experience than in any other practice lesson carried out in the course (Item 32). 48.6% (n = 34) and 28.6% (n = 20) agree and strongly agree with this idea. With regards to their autonomy in the planning of the case study process (Item 33), 58.6% (n = 41) agree and 32.9% (n = 23) strongly agree with that assertion. Finally, the results obtained in the item about if they have good organizational and time management skills (Item 34), 54.3% (n = 38) and 37.1% (n = 26) respectively agree and strongly agree with that statement. Just 5.7% (n = 4) neither agree nor disagree and 2.9% (n = 2) disagree.

*Table 4. Statistics of the dependent variables of the teacher and learner's role*

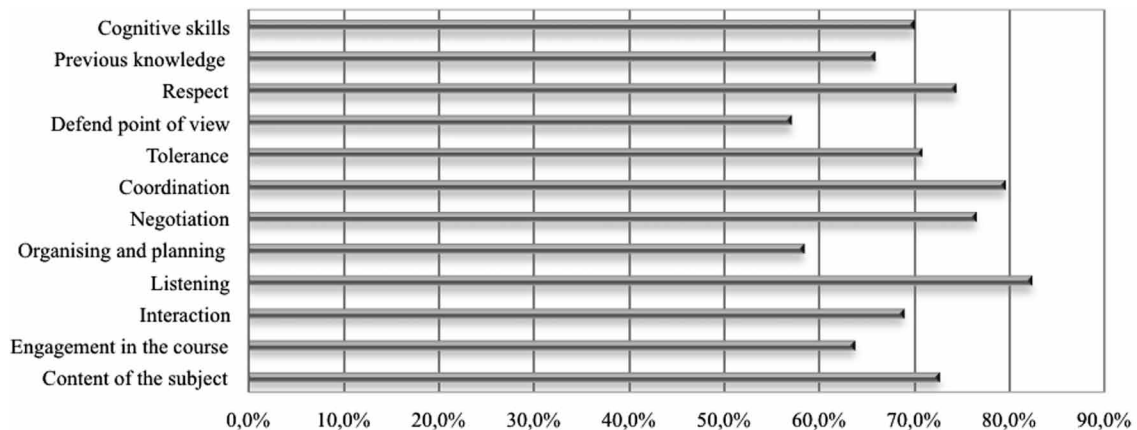
Items	Strongly Disagree	Disagree	Neither agree or disagree	Agree	Strongly Agree	$\bar{x}$	Sx
Item 25			7.1% (n = 5)	58.6% (n = 41)	34.3% (n = 24)	4.27	.588
Item 26		1.4% (n = 1)	11.4% (n = 8)	58.6% (n = 41)	28.6% (n = 20)	4.14	.666
Item 27		2.9% (n = 2)	11.4% (n = 8)	54.3% (n = 38)	31.4% (n = 22)	4.14	.728
Item 28		4.3% (n = 3)	7.1% (n = 5)	50% (n = 35)	38.6% (n = 27)	4.23	.765
Item 29		5.7% (n = 4)	8.6% (n = 6)	48.6% (n = 34)	37.1% (n = 26)	4.17	.816
Item 30			17.1% (n = 12)	52.9% (n = 37)	30% (n = 21)	4.13	.679
Item 31		4.3% (n = 3)	15.7% (n = 11)	42.9% (n = 30)	37.1% (n = 26)	4.13	.833
Item 32	4.3% (n = 3)	2.9% (n = 2)	15.7% (n = 11)	48.6% (n = 34)	28.6% (n = 20)	3.94	.976
Item 33			8.6% (n = 6)	58.6% (n = 41)	32.9% (n = 23)	4.24	.600
Item 34		2.9% (n = 2)	5.7% (n = 4)	54.3% (n = 38)	37.1% (n = 26)	4.26	.695

### **Strengths and Weaknesses of the Case Study Method as a Teaching Method**

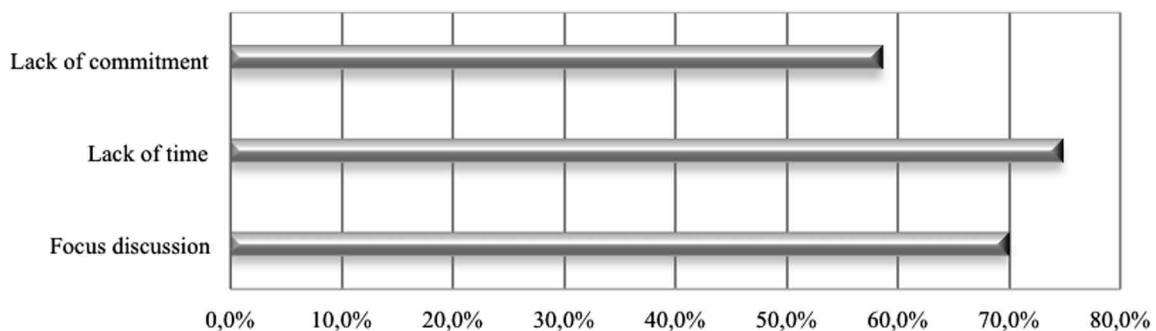
Regarding the strengths of case study method as a teaching method (Figure 1), most students (72.5%, n = 51) emphasize that it simplifies difficult aspects of the subject School Organization and allows them to be more engaged in the course (63.6%, n = 45). They consider that it is a didactic and pedagogical tool that facilitates learners' interactions (68.7%, n = 48), improving communicate and social skills such as listening (82.2%, n = 58), organising and planning (58.2%, n = 41), negotiation (76.3%, n = 53), coordination (79.4%, n = 56), tolerance for different views of the same aspect (70.6%, n = 49), ability to defend their point of view with logic (56.9%, n = 40) and respect (74.2%, n = 52). They also highlight the possibilities offer to them to apply previous knowledge in specific and real school situations (65.7%, n = 46). Finally, they emphasize how the case study method favours the development of cognitive skills (69.8%, n = 49).

On the other hand, participants highlight some limitation of the experience (Figure 2) such as the difficulty to focus discussion (69.8%, n = 49), the lack of time to develop the case study mostly due to their lack of experience in these practices (74.6%, n = 52), and the lack of commitment on the part of some of their peers in the development of the case studies proposed (58.4%, n = 41).

*Figure 1. Strengths of the case study method as a teaching method*



*Figure 2. Weaknesses of the case study method as a teaching method*



## **CONCLUSION AND DISCUSSION**

To meet the aim of the current research, the investigators have analysed the learners' perception of the case study method as a teaching method and the assessment of this kind of experience, as well as their opinions about the roles developed by them and the teacher, and their perspective about the strengths and weaknesses of the use of case study method in the subject School Organization. Overall, findings show that most students show positive perception of using case study method as a teaching method, and provide insight for incorporating this kind of educational experience in the Degree of Infant Education and specifically in the subject School Organization. On analysing the results the researchers found that the majority of the learners highlighted the benefits of case study method to be involved in the real context of a school, of a classroom setting, and to provide them the possibility to deal with real teaching-learning situations or problems (Olkum, Altun & Deryakulu, 2009) from the first academic year of their degree of infant education. Moreover, they learners have had the opportunity to put into practice what they have previously acquired in the subject School Organization and in other subjects of the degree (Gray et al., 2006; Watson and Sutton, 2012). This emphasizes the relevant role of case studies to help learners to connect theoretical concepts with practice, and to apply what they have learned during master classes to specific and real educational situations. In addition, the learners have stated how the experience has positively changed their opinions about their future work as infant teachers, and it has brought them the opportunity to understand better what being a teacher and being part of the organization of a school entail. Moreover, from the results obtained, it can be concluded that the students feel more capable of dealing with the situations suggested in the case study in the future after the experience developed.

From the results, we can conclude that the use of case study method has favoured that the students learned from their classmates, sharing different perspectives towards a specific situation or problem, and helping each other in the discussion of the case (Muraya & Kimamo, 2011). The case studies have promoted an intense debate that facilitates learners' interactions on finding the appropriate solutions to a particular situation (Minniti, et al., 2017; Ngcobo, 2008). In general, it can be concluded that the use of case study method has also contributed to the development of different skills. On one hand, we can conclude that those interactions improve communicative and social skills (Scheepers & de Villiers, 2000) as listening since the students learn to listen to their classmates, learn to pay attention to what the other people in their group or in the class think, believe (Badger, 2010), or say about the situation suggested in the case study. Moreover, the fact of being better listeners help them to listen carefully and understand better what their classmates want to say. On the other hand, the experience developed has helped learners to improve other skills as negotiation and coordination with their team members, to organise and plan the way in which they present the case study. This great collaboration, which has been promoted between the students, is essential in the current society and, of course, in their future work at school. The fact that the experience facilitates cooperative and collaborative learning as well as enhances teamwork (Ngcobo, 2008), it also favour that the learners improve other skills as the tolerance and respect towards other opinions as well as the ability to defend their own perspectives. Apart from these skills; the experience has also favoured the development of critical thinking (Bowe et al., 2009; Minniti, et al, 2017; Popil, 2011), analytical thinking (Herreid, Schiller, Herreid, & Wright, 2011), as well as problem solving (Badger, 2010), and cognitive skills.

Another relevant point that can be extracted from the experience carried out is the relevant role of all the protagonist of the teaching-learning process. On one hand, it is highlight the significant and essential role of the teacher for the success of the experience since she has encouraged the students to

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participate in the experience (Hege, Ropp, Adler, et al., 2007) and also has guided them (Jernquist & Svalenius, 2007; Wright & Grenier, 2009) and has facilitated them (Scheepers & de Villiers, 2000) the process through the feedback provided that also has played a relevant role. On the other hand, we can conclude that the students have also played a relevant role in the experience, being actively involved in it (Markulis & Geneso, 2007), and the protagonist of the process. This has clearly been possible because they have been totally involved in the experience, allowing them to learn by doing (Hackney, McMaster & Harris, 2003; Hughes, Huston & Stein, 2011).

Special emphasis is placed on the assessment of the experience and the relevant role that the teacher has played in it, telling the students how, when and on what they will be assessed from the beginning of the experience. It can be concluded that the design of the assessment has been another relevant aspect for the success of the experience. As the results have pointed out it has been appropriate to the experience developed, has allowed measurement the advance of the students' learning, and has rigorously tracked their progress.

To sum up, the experience developed has contributed to maximize the learning experience and empower students in the teaching-learning process since they have had the opportunity to manage the development of the case study and its discussion, and demonstrate and improve their skills as future infant education teachers. However, it is necessary to eliminate its limitations, specifically that which refers to the lack of experiences in these practices in education.

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## **KEY TERMS AND DEFINITIONS**

**Active Learning:** It is a type of learning in which teaching tries to involve learners in the learning process. Students are actively engaged in the development of the lessons, activities, etc., and improve skills such as reflection, problem solving and critical thinking, etc.

**Case Study Method:** It is a method in which the students investigate an in-depth experience, an event, a process, or one or more individuals in the real-life context over a period of time.

**Collaborative Learning:** It refers to a situation in which a group of students learn together and have an active role in creating and sharing knowledge.

**Cooperative Learning:** It is a teaching strategy that does not only arrange students into groups to develop different activities, but it also involves students in the teaching-learning process, having an active role.

**Higher Education:** It is the third level of education. It is beyond secondary education and is normally provided by universities or colleges.

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**Problem Solving:** It refers to the process carried out to find effective solutions to a problem or situation. It is one of the key skills that twenty-first century students need to develop.

**Quantitative Research:** It is a structured methodological approach focused on quantifying the problem and finding out how frequent the results are in order to project these results to a larger population. The techniques used to collect quantitative data are mainly questionnaires.

**Teaching Method:** It involves the principles and strategies used by teachers to facilitate students learning according to their personal characteristics and needs.

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## Chapter 33

# “Asking the Woman Question” in Case Study Research

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### ABSTRACT

*Case study research provides the researcher with the opportunity to decide the most convincing epistemological orientation. Such versatility is nonetheless embedded in the assumption of objectivity contends G. Griffin in *Difference in View: Women and Modernism*, which speaks of an “abstract masculinity” intended here as the assumption of universal humanity where men’s and women’s experiences are melted into one experience. Case study research, this contribution contends, even when about women, hinders the experience of women, an experience that is always situated, relational, and engaged. In other words, ontologically, it is argued here, the reality of women’s lives is absent from the domain of case study research because the language adopted when framing case study research is still very much a language that talks about women, but it does not allow women to speak.*

### INTRODUCTION

In case study research, too often researchers hold the view that there is one single reality, which is independent of the individual and can be apprehended, studied and measured, through a neutral perspective (Woodside and Wilson, 2003). This contribution challenges the notion of epistemic privilege (Pinnick, 2005) which talks of abstract masculinity (Connell, 1983; 1995; see also Connell and Messerschmidt, 2005) arguing for the need to “ask the woman question” in case study research. Making knowledge claims across differences (Griffin, 1994) allows for the reproduction and co-production of hidden power relations to be dissected and for such relations to surface. Borrowing from feminist approaches (Oakley, 1981; England, 1994; Ermath, 2000), the question who has the power to know what and how power is implicated in the process of producing knowledge, takes central stage in this chapter when seeking to understand the value of case study research. Regularly facing the challenge of having to defend itself

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from generalisation (Yin, 2014), case study research is well positioned to call into question the power relations in the research encounter. The power to decide what difference is measured against and how the “different” is constructed, in turn leads to the problem of claiming objectivity as epistemological privilege (Guba, 1981).

The key objective of this contribution is therefore to challenge such objectivity by suggesting the adoption of a feminist standpoint (Katila and Meriläinen, 1999) which confronts a privileged social identity by making a claim that it is unfair to generalize from a single case whilst contending that each singularity has its own value and merit (Brooks, 2007). The proposed understanding of standpoint is consistent with some claims Harding (1991) makes about standpoints when she emphasizes that a standpoint is not the same as the social position occupied by an inquirer or a participant in her study. Instead, she claims that taking a standpoint is a matter of moral and political commitment, for this reason suggesting that a standpoint is a collective achievement.

This contribution maintains therefore that feminist standpoint epistemology in all its nuances (Bondi, 1990; Ramazanoglu and Holland, 2002), offers a credible and valuable contribution to support strategies for using case study research which ultimately “asks the woman question” (Jayaratne and Stewart, 1991). Evaluating the most current definition of case study research, it is noticeable how Stake (1995) selects a flexible stance and, while concerned with rigor in the processes, he maintains a focus on what is studied (the case) rather than how it is studied (the method), neglecting to ask such an important question. For Stake, case study research is the study of the particularity and complexity of a single case, coming to understand its activity within important circumstances: woman, as a category of epistemological enquiry is indeed absent here. Equally, Merriam (2009) includes what is studied and the products of the research when defining case study as an in-depth description and analysis of a bounded system, avoiding to “ask the woman question”. Yin’s two-part definition (2014) focuses on the scope, process, and methodological characteristics of case study research, emphasizing the nature of inquiry as being empirical, and the importance of context to the case. Again, here, women are invisible (see also Holmgren and Hearn, 2009). From this brief overview, it is already perceptible that what is emphasized here is that the defining feature of case study research often takes central stage over the content of any research endeavour where case study research is employed. In discussing the proliferation of definitions (and subsequent confusion), Flyvbjerg (2011) is particularly valuable here as he contends that using a simple definition, almost borrowed from the dictionary, might be a more useful approach, albeit the omission of the lived reality of women’s lives, as the assumption remains of an abstract masculinity (Connell, 1983; 1995). Whatever the definition preferred, these varied definitions stem from the researchers’ differing methodological and epistemological approaches and often reflect the elements they emphasize as central to their designs (Forchuk and Roberts, 1993). The diversity of approaches subsequently adds diversity to definition and description but also contributes to supporting researchers (Stake, 1995; Merriam, 2009 and Yin, 2014) wishing to neutralise the claim that case study research carries little scientific gravitas, because of its generalization. Researchers (Dubois and Gadde, 2002) often consider the fact that the same accusation has been made against a single scientific experiment. The argument is that scientific facts are rarely based on single experiments; they are usually based on a multiple set of experiments, which have replicated the same phenomenon under different conditions. The same approach can be used with multiple case studies but requires a different concept of the appropriate research designs (Verschuren, 2003). In search of appropriateness, the adoption of a feminist standpoint is not merely an exercise in ideological reassurance, but rather the opportunity to maintain that a feminist standpoint epistemology in all its nuances (Ramazanoglu and Holland, 2002), offers a credible and valuable contribution to

support strategies for using case study research as a method of enquiry equipped to defend the claim that leaving differences out of research without acknowledgment has implications for what knowledge researchers produce, what power relations they consider, and whom they constitute as absent. Case studies, like experiments, are generalizable to theoretical propositions and not to populations or universes (Mitchell, 1983). In this sense, the case study, like the experiment, does not represent a sample, and the investigator’s goal, as Yin (2014) reminds us, is to expand and generalize theories thus focussing on analytic generalization, and not to enumerate frequencies as it is the case in statistical generalization. Against generalization and against the bias paradox (Adler and Brenner, 1992; Antony, 1993), generated by a theory of epistemic justification, as discussed in the first part of this contribution, the concluding section of this contribution suggests the adoption of a contextualist theory of epistemic justification in order to make sure that case study research is well equipped to “ask the woman question.” The claim here is for the bias paradox to dissolve as soon as researchers adopt a contextualist theory of epistemic justification (Houston, 2001) because a contextualist theory of epistemic justification enables them to assess the relative merits of socially grounded perspectives without evoking the image of a “view from nowhere” (Harding, 1991; 1993;1995; Hearn, 2004).

## **BACKGROUND**

The task of “asking the woman question” in case study research, brings to the surface two sets of problems: the first orbits around the role of the researcher in the research encounter (Crapanzano, 1977) and the second rests on the nature of power relations in research (Hammersley and Gomm, 1997). If case study research is intended as a dialogical process (Gerring, 2004) in which the research encounter is defined by both the researcher and the person being researched, some concerns already arise. The first is that the dialogical nature of research increases the probability that the research may be transformed by the input of the researched (Easton, 1998). The second is that dialogism means that the researcher is a visible and integral part of the research setting (Krefting, 1991). Indeed, research is never complete until it includes an understanding of the active role of the researcher’s self which is exercised throughout the research process (Sayer, 1992). In other words, researchers do not parachute into the field with empty heads ready to record the facts (Anthony and Jack, 2009). As Stanley and Wise (1993) point out, researchers remain human beings. This is to say that the researcher is an instrument in her/his research and furthermore researchers are not part of some universal monolith (Opie, 1992). Indeed, they are otherwise positioned subjects with different biographies; they are not dematerialized, disembodied entities (Longino, 1990). Researchers are subjects. This subjectivity does influence the research encounter as illustrated by the extensive literature on how, for instance, the gender of the researcher and those being researched affects the nature of any research endeavour (Geiger, 1990; Oakley, 1981; Warren, 1988). Researchers have distinctive personal histories and diverse lived experiences, and therefore, as Warren (1988) spells out, to deem the researcher as any person, without gender, who would objectively produce the same findings as any other person, is completely fictitious.

With reference to case study research, the researcher’s biography directly shapes the research endeavour in two ways. Clearly, different and distinctive personal characteristics admit as true specific insights, and, as a consequence, some researchers comprehend and evaluate some phenomena more effortlessly and better than others. Furthermore, the everyday lives of the researched are doubly mediated by the researcher’s presence and any response to such presence. No researcher can conveniently tuck

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away the personal behind the professional, because case study research is personal (Creswell, 1998). A researcher is positioned by her/his gender, age, race/ethnicity, sexual identity, and so on, as well as by her/his biography, all of which may hinder or empower any research insight (Hastrup, 1992).

The nature of power relations in the research encounter, when the chosen methodological approach is case study research, gives rise to another set of problems. The claim here is that such research approach is inherently confrontational in that it is the purposeful disruption of other people’s lives (Anthony and Jack, 2009). Even when it is possible to even argue for exploitation and possibly betrayal as endemic to case study research (Flyvbjerg, 2011), this does not mean that the research experience is always a negative one for the researched. The argument here rests on the premise that case study research might actually expose the researched to greater risk and might be more intrusive and potentially more exploitative than more traditional methods (Finch, 1984; Oakley, 1981; Okely, 1992; Stacey, 1988, 1991).

Furthermore, the ambiguity about case study being either or both a methodology and method should be highlighted here. Across the literature, case study is referred to as a methodology and a method, an approach, research and research design, research strategy, and/or a form of inquiry (Anthony and Jack, 2009; Brown, 2008; Creswell, 2014; Gerring, 2004; Merriam, 2009; Simons, 2009; Stake, 2006; Stewart, 2014; Yin, 2014). Often these terms are used interchangeably without definitional clarity. For example, Yin (2014) discusses case study research and in the context of presenting case study, refers to it as a research method while emphasizing the procedures used. He does not use the terms methodology or strategy. Creswell (2014) refers to case studies as a qualitative design, while others use the term case study (Flyvbjerg, 2011; Stake, 1995, 2006; Stewart, 2014), qualitative case study (Merriam, 2009), or describe case study as an approach (Simons, 2009). This mixed use of terminology is puzzling given the definitional separations between methodology and methods and the varied application of case study in research endeavours. Notwithstanding the definitional disconnections, both method and methodology are committed to objectivity, aiming to produce valid knowledge, in a sort of a ‘no-nonsense commitment to faithful accounts of a real world’ (Harding, 1993:50). The need to be critically conscious of the research process and their place in it, but still tell “truer” stories about a “real” social world – here debts to Haraway (1991) are evident – is a goal that case study research and feminism have in common (Ermath, 2000).

## **ISSUES**

### **The “Conditional Release” of Objectivity in Case Study Research**

Case study research has a practical versatility in its approach (Rosenberg and Yates, 2007). Philosophically, it can be orientated from a realist or positivist perspective (Robson, 1993; Dickens, 2003) where the researcher holds the view that there is one single reality, which is independent of the individual and can be apprehended, studied and measured, through to a relativist or interpretivist perspective (Hancock and Algozzine, 2006). Such philosophical versatility provides the researcher with the opportunity to decide the methodological orientation used in the conduct of the case study (Eisenhardt, 1989). Yet within such versatility, the assumption of objectivity, defined as the separation between knower and known, speaks of an “abstract masculinity”, a sort of strong objectivity, which in Harding’s (1993) terms is not an accommodation of Hammersley and Gomm’s (1997) control of bias. Rather, it is an attempt to contextualise a Cartesian opposition between subject and object with the aim to abandon false claims to value-freedom.

Theoretical justifications cannot avoid questions of significance and this is particularly relevant when seeking to challenge abstract masculinity in case study research, as I will discuss later. In the relevant literature (Creswell, 2014; Gerring, 2004; Merriam, 2009; Simons, 2009; Stake, 2006; Stewart, 2014) is well established that not every set of true statements about a given phenomenon constitutes an acceptable theory of that phenomenon: some sets offer a distorted, biased representation of the whole (Bhaskar, 1978). This can make them unworthy representations of a phenomenon even if they contain no falsehoods. Therefore, what constitutes an adequate, unbiased representation of the event or even the trend researchers wish to evaluate is relative to their values, interests, and aims. Consequently, researchers face a conditional release of objectivity in case study research because even the project of defining the boundaries of significant phenomena may involve contextual value judgments (Brown, 2008). Most noticeably, when critically evaluating the relevant academic literature (Flyvbjerg, 2011; Gerring, 2004), it appears that case study research, even when about women, obviates the experience of women, an experience that is always situated, relational, and engaged (Bondi, 1990). In other words, ontologically, the lived reality of women’s lives is absent from the domain of case study research because the language adopted when framing case study research is still very much a language that talks about women, but it does not allow women to speak. Feminists (Cameron, 1998) have come up with novel theories and perspectives on language as a social and cultural institution, questioning, for instance, the assumption that the male and the female share a common language, thus reviving an old debate about linguistic determinism – the question being how far language underpins as opposed to just reflecting researchers’ perception of the social world (Krefting, 1991). The question can be partially answered by reviewing the narratives employed by scholars who utilise case study research to support their claims (see e.g. Brown, 2008; Anthony and Jack, 2009), where their claims to objectivity is equated to abstract masculinity (Hearn, 2004). It is worth reiterating here that experience as a source of knowledge is that any one person’s experience is limited, partial and socially located and as such it cannot be taken as general knowledge of how social phenomena are organised as social relations (Easton, 2002).

### **Seeking Strong(er) Objectivity**

Strong objectivity requires that the subject of knowledge be placed on the same critical, causal plane as the objects of knowledge. Thus, strong objectivity requires what researchers can think of as strong reflexivity. This is because culturewide beliefs (Spivak, 1988) function as evidence at every stage in scientific inquiry: in the selection of problems, the formation of hypotheses, the design of research (including the organization of research communities), the collection of data, the interpretation and sorting of data, decisions about when to stop research, the way results of research are reported, and so on. The subject of knowledge – the individual and the historically located social community whose unexamined beliefs its members are likely to hold unknowingly – must be considered as part of the object of knowledge from the perspective of scientific method (Okely, 1992).

Strong objectivity requires that researchers and their communities be integrated into democracy-advancing projects for scientific and epistemological reasons (Ramazanoglu and Holland, 2002) as well as moral and political ones (Hartsock, 1990). From the perspective of such standpoint arguments, empiricism’s standards appear weak; empiricism advances only the “objectivism” that has been so widely criticized from many quarters (Smith, 1988). Objectivism impoverishes its attempts at maximizing objectivity when it turns away from the task of critically identifying all of those broad, historical social desires, interests, and values that have shaped our societies. It is worth highlighting here that the

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conception of value-free, impartial, dispassionate research is supposed to direct the identification of all social values and their elimination from the results of research, yet it has been operationalized to identify and eliminate only the social values and interests that differ among the researchers and critics who are regarded by the scientific community as competent to make such judgments (Layder, 1990). However, objectivism also conceptualizes the desired value-neutrality of objectivity too broadly. Objectivists claim that objectivity requires the elimination of all social values and interests from the research process and the results of research. It is clear, however, that not all social values and interests have the same bad effects upon the results of research (Katila and Meriläinen, 1999).

### **The Abandonment of Objectivity**

Some feminists (Spivak, 1988) argue that the very notion of objectivity should be abandoned. They say that it is hopelessly tainted by its use in racist imperialist, bourgeois, homophobic, and androcentric scientific projects (Spivak, 1988). Moreover, it is tied to a theory of representation and concept of the self or subject that insists on a rigid barrier between subject and object of knowledge between self and other (Opie, 1992) which feminisms label as distinctively androcentric, thus currying the weight of abstract masculinity (Pinnick, 2005). Indeed, various concepts of otherness as constituting a structural relationship of inequalities have been widely taken up within feminism (Kitzinger and Wilkinson, 1996; Butler, 1991).

Leading case study researchers do however emphasize that an overarching methodology shapes a case study design and that multiple sources of data and methods can be used (Merriam, 2009; Stake, 2006; Yin, 2014), thus providing the distinction between the two. This distinction accentuates the need for researchers to describe the particular underpinning methodology adopted and to clarify the alignment of chosen methods used with their philosophical assumptions and their chosen approach (Mitchell, 1983).

Exploring the philosophical orientation of case study research and variations in different case study approaches can help to clarify these differences, thus promoting a better understanding of how to apply these principles in practice. This contribution therefore, reiterates the belief that feminism, while necessarily political, at the same time must be centrally concerned with method, truth, and epistemology: such point now well documented in the literature dealing with methodologies of social sciences (Ramazanoglu and Holland, 2002). This is because, to paraphrase Hartsock (1990), feminism is about truth claims and how scholars, who defined them as feminists, justify them. At the very outset it should be noted that the search for truth in a feminist mode, leads to respect experience and differences (Stacey, 1991). Activity is epistemology: women and men create their own realities through their different activities and experiences (Adler and Brenner, 1992). If this were the whole story, however, then both truth and reality would be multiple, even “relative” (Lau, 2004).

From the beginning (Brooks, 2007), feminist standpoint theorists have recognized that feminist politics demand a justification for the truth claims of feminist theory, that is, that feminist politics are necessarily epistemological. In this way, the challenge to any abstract masculinity, which is characterised by the “add the woman and stir” approach, is evident. More specifically, when challenging abstract masculinity, feminist standpoint theorists’ quest for truth and politics has been shaped by two central understandings: that knowledge is situated and perspectival (Tong, 1992) and that there are multiple standpoints from which knowledge is produced (Harding, 1993; 1995). As the theory has developed, feminist standpoint theorists have explored, first, how knowledge can be situated yet “true,” and, second, how we can acknowledge difference without obviating the possibility of critique and thus a viable feminist politics (Ermath,

2000). Feminist standpoint theorists have answered these questions in a variety of ways; many of these answers have been unsatisfactory and the theory has been frequently reformulated (Smith, 1988). In the course of their arguments, however, these theorists have made an indispensable contribution to feminist theory. Feminist standpoint theory, it is contended here, represents the beginning of a paradigm shift in the concept of knowledge, a shift that is transforming not only feminist theory but also epistemology itself. What Code (1991) calls a “new mapping of the epistemic domain” that characterizes feminist theory owes much to the articulation and development of feminist standpoint theory. Nonetheless, the bias paradox highlighted by this novel epistemic domain necessitates further investigation.

## **The Bias Paradox**

Harding’s (1991) feminist standpoint epistemology is an ambitious and controversial attempt to argue that diversity among inquirers is an epistemic advantage to a community of inquirers. According to Harding, epistemic advantage accrues not to just any kind of diversity but to diversity with respect to the social positions of inquirers and participants in their studies (Wylie, 2003). Harding’s feminist standpoint epistemology advances the claim that those who are unprivileged with respect to their social positions are likely to be privileged with respect to gaining knowledge of social reality. According to Harding, unprivileged social positions are likely to generate perspectives that are “less partial and less distorted” than perspectives generated by other social positions (Harding, 1991, p. 121). Such claim is referred as the thesis of epistemic privilege which is connected to a particular conception of objectivity, strong objectivity, which is the view that objective research starts from the lives of unprivileged groups. Diversity with respect to social positions is beneficial for knowledge seeking communities because there are many ways of being unprivileged. As Harding explains, “the subject of feminist knowledge – the agent of these less partial and distorted descriptions and explanations – must be multiple and even contradictory” (1991, p. 284). The thesis of epistemic privilege has been criticized on two grounds. One objection is that Harding’s feminist standpoint epistemology does not provide any standards of epistemic justification that enable one to judge some socially grounded perspectives as better than others (Wikgren, 2005). Another objection is that there is no evidence in support of the thesis of epistemic privilege (Proctor, 1992). These two objections are connected. As long as it is not clear what standards of epistemic justification allow researchers to judge some socially grounded perspectives as better than others, it is not clear either what kind of evidence researchers should expect in support of the thesis of epistemic privilege. The first objection is raised by Antony (1993) and Longino (1999) who contend that the thesis of epistemic privilege is undermined by another thesis in Harding’s feminist standpoint epistemology, the thesis that all scientific knowledge is socially situated (Harding, 1991). With reference to Wylie (2003) this can be described as the situated knowledge thesis. The thesis of epistemic privilege relies on the assumption that there is a standard of impartiality that enables one to judge some socially grounded perspectives as “less partial and distorted” than others (Nelhaus, 1998). The situated knowledge thesis seems to undermine this assumption by suggesting that all knowledge claims are partial (Hanson and Yosifon, 2004) in virtue of being grounded on a particular perspective on social reality. As Longino (1999) explains, in order to maintain that some socially grounded perspectives are better than others, a standpoint epistemologist would have to be able to identify privileged perspectives from a non-interested position, but according to standpoint epistemology, there is no such position (see also Hekman 2000). Antony (1993) calls the tension between the thesis of epistemic privilege and the situated knowledge thesis a “bias paradox”: in claiming that all knowledge is partial, feminist standpoint epistemology chal-

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lenges the very notion of impartiality (see also Adler and Brenner, 1992). Consequently, by undermining the notion of impartiality, feminist standpoint epistemology is in danger of losing its critical edge (Antony, 1993). Harding (1991) is aware of the bias paradox and instead of abandoning either the thesis of epistemic privilege or the situated knowledge thesis, she tries to solve the bias paradox by introducing a distinction between cultural and epistemological relativism. She claims that “a strong notion of objectivity requires a commitment to acknowledge the historical character of every belief or set of beliefs – a commitment to cultural, sociological, historical relativism” (Harding 1991, p. 156). And she adds that “it also requires that judgmental or epistemological relativism be rejected” (Harding 1991, 156). However, Harding’s attempt to solve the paradox is not successful because the distinction between cultural and epistemological relativism begs the question of what standards of epistemic justification enable her to reject epistemological relativism (Yeung, 1997; Steinmetz, 1998). Instead of articulating such standards, Harding insists that feminist standpoint epistemology should reject the assumption that there is a “view from nowhere” (Harding, 1991). Moreover, Harding is reluctant to say that the goal of scientific inquiry is truth or empirical success. Instead, she suggests that scientific inquiry should progress away from falsity rather than toward truth (see also Hanson and Yosifon, 2004). A second objection takes shape, the claim that there is no evidence to support the thesis of epistemic privilege. This objection is raised by Pinnick (1994, 2005) who suggests that the thesis of epistemic privilege should be understood as an empirical hypothesis. She claims that feminist literature “describes no effort to accumulate the kind of empirical data that could easily resolve matters in favour of the feminists” (Pinnick 1994, p. 653; see also Hekman 2000, p. 23). Furthermore, Pinnick (2005) claims that the thesis of epistemic privilege still remains without evidence to support it. Harding (1991) however, presents seven claims in support of the thesis of epistemic privilege by arguing that women’s lives have been devalued and neglected as starting points for scientific research and as the generators of evidence for or against knowledge claims. She also states that women are “strangers” to the social order and that women’s oppression gives them fewer interests in ignorance about the social order. Harding (1991) then contends that women can come to understand hidden aspects of social relations between the genders and the institutions that support these relations by means of struggles to change them. Women’s perspective is from everyday life, she continues, and such perspective comes from mediating ideological dualisms: nature versus culture. Finally, she argues, women researchers are “outsiders within”. However, her arguments fail to be convincing because the universal extension of her claims about women undermines their plausibility. Clearly, it is possible to consider counter-examples to each claim, for example, women whose lives have not been devalued, women who are not strangers to the social order, or women who have an interest in ignorance about social order, and so on (Adler and Brenner, 1992). But even if the extension of Harding’s claims about women is narrowed down, her arguments fail to be convincing because it is not clear how these seven claims support the thesis of epistemic privilege, the claim that women’s social positions, insofar as they are unprivileged, are likely to generate better perspectives on social reality than other social positions. More specifically, it is not clear what is meant by a perspective in feminist standpoint epistemology (Holmgren and Hearn, 2009). As long as it is not clear what a socially grounded perspective is and what the relevant alternatives are, the thesis of epistemic privilege lacks empirical content (Lau, 2004). Hence the appeal to the bias paradox which takes the shape of a contextualist theory of epistemic justification.



## **SOLUTIONS AND RECOMMENDATIONS**

Contextualism can be used to define what counts as evidence for the thesis of epistemic privilege; furthermore, contextualism liberates researchers from the assumption that researchers have to evoke “a view from nowhere” in order to be able to compare two or more socially grounded perspectives (Code, 1991). In contextualism, the relative merits of socially grounded perspectives are necessarily evaluated in some context of default entitlements (Lau, 2004). No researcher is expected to defend the thesis of epistemic privilege in all contexts of epistemic justification (Anderson, 1995). The controversy on feminist standpoint epistemology is not only about the question of whether there is evidence in support of the thesis of epistemic privilege; it is also about the question of what kind of evidence is relevant for the thesis of epistemic privilege (Pinnick, 2005). In order to “ask the woman question” in case study research solutions and recommendations, therefore, take the shape of a contextualist approach.

### **Adopting a Contextualist Epistemic Approach in Case Study Research**

As Williams (2001) defines it, a contextualist theory of epistemic justification is the view that epistemic justification takes place in a context of assumptions that function as default entitlements. A contextualist theory of epistemic justification includes two further assumptions. One assumption is that default entitlements can be articulated and challenged, but only by a recontextualization that involves assumptions of its own (Williams, 2001). Another assumption is that recontextualization can go on indefinitely and as he explains, this is the open-endedness of inquiry, not a vicious regress of justification. At first glance, contextualism may appear to be a form of epistemic relativism (Sayer, 2000), which holds that epistemic justification is relative to some framework of assumptions, almost a sort of “framework-relativism” (Pawson and Tilley, 1997). However, contextualism is not framework-relativism because default entitlements are not plain assumptions. Default entitlements are adopted with a commitment to defend them when they are challenged with contrary evidence or other arguments. As Williams (2001) explains, contextualism implies a default and challenge model of epistemic justification. In a default and challenge model, an entitlement to one’s belief is the default position, but one has a duty to defend or revise one’s belief as soon as it is challenged with appropriate arguments (Williams, 2001). Therefore, whereas both contextualism and framework-relativism hold the view that epistemic justification is relative to some context, only framework relativism holds the view that contexts are “frameworks of ultimate commitments” (2001, pp. 224-225), a very useful approach to overcome the critique that case study research does not “ask the woman question”. In contextualism, no context includes ultimate commitments that are beyond criticism: when scholars challenge an assumption that functions as a default entitlement, an inquiry is shifted to another context where the challenged assumption is either defended, modified, or abandoned (Williams, 2001). This is the process of recontextualization where a belief is justified if and only if it is either itself basic or inferentially connected (in some appropriate way) to other justified beliefs (Williams 2001). Two further assumptions are in existence: the first is that there are basic beliefs, that is, beliefs that are in some sense justifiably held without resting on further evidence (Easton, 2002) and the second assumption is that there are beliefs that in virtue of their content are fitted to play the role of basic beliefs (Krefting, 1991). Contextualism is consistent with the first assumption, the view that there are beliefs that are justified without resting on further evidence. However, contextualism rejects the second assumption, the view that some beliefs are basic beliefs in virtue of their content alone. In contextualism, those beliefs that are justified without resting on further evidence have this epistemic status in virtue

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of functioning as default entitlements, not in virtue of their content alone (Houston, 2001). Therefore, these beliefs are more appropriately called default entitlements than basic beliefs. Moreover, whereas basic beliefs are assumed to be basic in every context of inquiry, default entitlements in contextualism are not assumed to have this epistemic status in every context. Some default entitlements may be cross-contextual but their epistemic status is nevertheless context-dependent and for such reason this approach can be beneficial to case study research when seeking to “ask the woman question”.

The bias paradox, as already argued, can be read as the tension between the thesis of epistemic privilege and the situated knowledge thesis (Haraway, 1991). The thesis of epistemic privilege relies on the assumption that there is a standard of impartiality which enables one to claim that some socially grounded perspectives are better than others (Smith, 1988). The situated knowledge thesis seems to undermine this assumption by suggesting that all knowledge claims are partial. There exists a contradiction between the thesis of epistemic privilege and the situated knowledge thesis if a standard of impartiality is understood in accordance with a foundationalist theory of epistemic justification. In other words, this means that a standard of impartiality is understood to involve basic beliefs. Clearly, the basic beliefs of foundationalism are not situated knowledge claims because they are basic in virtue of their content and they have this epistemic status in every context of inquiry. They are non-situated knowledge claims. Thus, it is impossible to reconcile the view that there are basic beliefs with the claim that all knowledge is situated. And therefore, if researchers utilising case study research adopt contextualism, then the bias paradox dissolves. In contextualism, a standard of impartiality is provided by some context of default entitlements. Default entitlements cannot be identified on the basis of their content alone. They may be empirical beliefs which have not been contested so far. Or they may be epistemic values such empirical adequacy, internal coherence, consistency with well-established bodies of knowledge, and explanatory power. Or they may be moral and social values which are relevant for epistemic justification. Moral and social values can be relevant for epistemic justification insofar as they give a reason to consider certain kinds of evidence as relevant for a hypothesis or a theory (Longino, 1990; Anderson, 1995, 2004). The crucial thing is that default assumptions are adopted with a commitment to defend them when they are challenged with contrary evidence or other arguments. Even though some default assumptions may be cross-contextual, they are not assumed to function as default entitlements in every context of inquiry. Thus, they are situated knowledge claims. And therefore, if researchers adopt contextualism in order to be able to “ask the woman question” in case study research, there is no contradiction between the thesis of epistemic privilege and the situated knowledge thesis. The image of a “view from nowhere” is also a reflection of foundationalism since a “view from nowhere” is best thought of as a set of basic beliefs, beliefs that have this epistemic status in every context of inquiry. Thus, foundationalism gives rise to a dilemma which suggests that we have to choose between two alternatives, either framework-relativism (the view that epistemic justification is relative to some framework of assumptions) or a “view from nowhere”. This is the dilemma that Harding struggles with when she aims to reject both epistemological relativism and a “view from nowhere” (Harding, 1991).

Contextualism reveals that this dilemma is false. Researchers do not have to choose between these two alternatives because there is a third alternative. A third alternative is the view that epistemic justification is relative to a context of default entitlements (Guba, 1981). A context of default entitlements provides some standards of epistemic justification which enable one to assess the relative merits of two or more socially grounded perspectives. A context of default entitlements is not just another framework of assumptions. The reason for this is that default entitlements are adopted with a commitment to defend or revise them when they are challenged with contrary evidence or other arguments. A context of default

assumptions is not a “view from nowhere” either. The reason for this is that default assumptions are not the basic beliefs of foundationalism. Therefore, contextualism enables one to assess the relative merits of socially grounded perspectives without referring to a “view from nowhere.”

## **FUTURE RESEARCH DIRECTIONS**

A balanced assessment of the contribution of feminist epistemology to case study research as presented in this contribution leads to a roadmap for future directions. While the framework proposed provides new features and benefits to gender-inclusivity in research, this contribution presents a research plan with an overarching goal to help ensure that case study research is developed systematically with scientific validation principles. The result of this plan will be a set of tools to improve approaches made available to a wider community of scholars seeking to address the issue of an “unbiased” representation of reality whilst challenging abstract masculinity as an assumption of academic rigour (Katila and Meriläinen, 1999). One might try to offer a value-neutral account of significance and bias, arguing that an unbiased theory, doing justice to the whole truth is one that disregards all contextual values in deciding which facts to represent or how to represent them. The question still remains as what would such an account look like? The whole truth cannot be an account that literally represents every fact about the phenomenon being studied. No theory offers anything close to that. Nor should any theory try. Such a representation would end up burying the significant truths in a mass of irrelevant and trivial details (Antony, 1993).

## **CONCLUSION**

When “asking the woman question” in case study research, is fundamentally important to acknowledge with Kristeva (1981) that it is pivotal to underline the multiplicity of female expressions and preoccupations and the different ways in which women are positioned in society (Code, 1991). From the intersection of these differences is possible to discover a standpoint for women that does not collapse the differences among women into the “Universal Woman” (Kristeva, 1981). Unquestionably, any such program of action will not get very far unless the dissimilarities among women are entirely investigated. And, as Tong (1992) put it, because feminist thought is kaleidoscopic, a closer inspection will always reveal new visions, new structures, new relationships for personal and political life, all of which will be different tomorrow than today. These are the strengths and the value of guaranteeing that the “woman question” is asked in case study research. Such questioning allows the acknowledgment that feminist thought, although it has a beginning (Griffin, 1994), it has no end, and because it has no predetermined end, feminist thought, permits each woman, both as researcher and as research participant, to think her own thoughts (Kitzinger and Wilkinson, 1996). At the same time, feminist’s contribution to case study research goes further than highlighting the woman’s perspective as it enables steps to promote case study research as a distinctive form of empirical enquiry by confronting the widespread claim that case study research provides little basis for scientific research (Simons, 2009).

“Asking the woman question” in case study research allows scholars – those who teach research methods and those who are involved in research – to also challenge a notion of feminist standpoint epistemology (Harding, 1993) which has relied for a long time on the supremacy of notions such as perspectives and standpoints. As Pohlhaus (2002) has argued, the very term standpoint evokes an image of a position

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where one stands and views the object of inquiry from a particular perspective. Remarkably, even though this image has been effective in feminist epistemology (Smith, 1988), time has come to recognise that it originates more setbacks than it solves. Indeed, the visual and spatial image of a standpoint effortlessly directs researchers into believing that they necessitate a “view from nowhere” for them to be skilled to compare different perspectives (Ermath, 2000). It is contended here that a contextualist theory of epistemic justification is much better equipped to suggest an alternative to a “view from nowhere.”

In contextualism, epistemic justification takes place in a context of default entitlements. In other words, this is to say that in any context, some assumptions are likely to function as default entitlements simply in virtue of the fact that no one has yet challenged them in an appropriate way (Harding, 1993). This may be due to the fact that scientific communities are dispersed in institutions and societies that have limited the access of many social groups into scientific education and profession in many ways. This in turn requires scholars, those who teach research methods and those who do undertake research, to locate themselves in their work and to reflect on how their location influences the case study they choose, how they conduct their research, and how they write their research (Ramazanoglu and Holland, 2002). Furthermore, contextualism insinuates that opening a community to wider participation as well as to outside criticism enhances the prospect that some default assumptions are confronted and tested in suitable ways. The more diversity there is in a scientific community, the more likely it is that its default assumptions are challenged, and consequently either defended, modified, or abandoned (Ackroyd and Fleetwood, 2004).

A standpoint then becomes a commitment to diversity in a scientific community (Anderson, 1995, 2004), a way of doing research with certain moral and social values. Because a standpoint involves moral and social values, but moral and social values have a different function in a standpoint from the one they have in a socially grounded perspective, a standpoint is a matter of building scientific communities which are committed to diversity and responsive to criticism coming from other communities. Consequently, whereas a socially grounded perspective is something that an individual researcher can achieve in their inquiry, a standpoint is a community achievement.

It is worth highlighting here as a concluding remark, that to be “asking the woman question” in case study research leads to talks about appropriation (even if it is only textual appropriation) as an inevitable consequence of case study research. This possibility may seem troubling for any researcher who wants to participate in accurately critical social science by translating all their academic endeavours into political action. Clearly, researchers cannot abandon the contradictory position in which they find themselves, in that they are locating themselves, and are located, in a position of power. And this is why the viability of some of the popular solutions for dealing with this (textual) appropriation, such as sharing the prepublication text with the researched for feedback and writing “multivocal” texts that “give voice” to the researched, are not fully convincing. Some feminists (Bell, 1991) nonetheless argue that these practices are vital parts of the research process: the intent being to minimize appropriation by avoiding misrepresentation and extending the idea of a reciprocal research alliance between the researcher and the researched. While it is important that researchers revise their work in response to the reactions of the researched, unquestionably the published text is the final construct and responsibility of the researcher. More specifically, it is the researcher who ultimately chooses whose voices to include.

To attend to some of the issues here raised is imperative to recognise that the research relationship is inherently hierarchical (Holmgren and Hearn, 2009); this is simply part and parcel of the (conflictual) role of the researcher (Hartsock, 1990). Although it is necessary to adopt strategies to counterbalance this inevitability, reflexivity alone cannot dissolve this tension. Reflexivity can make researchers more

aware of asymmetrical or exploitative relationships, but it cannot remove them. The research encounter is structured by both the researcher and the research participants, and the research, researched, and researcher might be transformed by the case study research experience. The suggestion here is for an approach that draws attention to the uneven power relations in the research encounter by exposing the partiality of the researcher’s perspective. Nonetheless, there exists a continuum between the researcher and the researched: such “betweenness” is shaped by the researcher’s biography, which filters the data and their perceptions and interpretations of the case study research.

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## KEY TERMS AND DEFINITIONS

**Feminist Epistemology:** Intended as a loosely organized approach to epistemology, rather than a particular school or theory, this is an examination of the subject matter of epistemology from a feminist standpoint. Feminist epistemology is a product and a consequence of both feminist theorizing about gender and traditional epistemological concerns.

**Generalization:** The act of interpretation that involves describing broad inferences from particular observations. Widely-acknowledged as a quality standard in quantitative research, this approach is more controversial in qualitative research.

**Hegemonic Masculinity:** Practice that legitimizes men’s dominant position in society and justifies the subordination of women, and other marginalized ways of being a man.

**Perspective:** A theoretical perspective is a set of assumptions about reality that inform the questions researchers ask and the kinds of answers they arrive at as a result. In this sense, a theoretical perspective can be understood as a lens through which researchers look, serving to focus or distort what they see.

**Reflexivity:** This is intended as the attitude by a researcher of attending scientifically to the context of knowledge construction at every step of the research process. Among researchers, there is an assumption that bias or reflexivity in a research study is detrimental to the research endeavour.

**Situated Knowledge:** The knowledge of one’s social position, formed by the prevailing power structures, is a prerequisite for knowledge about society and human beings.

**Standpoint:** A set of beliefs and ideas from which opinions and decisions are shaped.

**Strong Objectivity:** The notion that the perspectives of marginalized and/or oppressed individuals can facilitate more objective accounts of the social world.

**Subjectivity:** Subjectivity guides everything from the choice of topic that researchers study, to formulating hypotheses, to selecting methodologies, and interpreting data.

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