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Achieving Sustainability Using Creativity, Innovation, and Education

A Multidisciplinary Approach

Ziska Fields

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Achieving Sustainability Using Creativity, Innovation, and Education:

A Multidisciplinary Approach

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University of Johannesburg, South Africa

A volume in the Practice, Progress, and Proficiency in Sustainability (PPPS) Book Series

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The field of philosophy, where the deepest existence debates are held, sheds light on other scientific fields while accommodating different perspectives on creativity. Understanding leadership from a creative thinking perspective is one of the ways of understanding, predicting, directing, and guiding human behaviors, both from an artistic and scientific point of view. Goals such as innovation, creativity, and sustainability make the awareness process important due to the reflections of rapidly changing technology on business and social life. For this reason, the change of thought process and the technological developments that guide this change are emphasized, and then the creative leadership term is discussed with a multidisciplinary perspective in this chapter. In this way, it is aimed to understand the new dynamics of the changing competitive environment more easily.

The current global pandemic has given rise the need of innovation and creativity from entrepreneurs in order to sustain their enterprise in the ever-changing environment that the world is faced with. This has resulted in many challenges that entrepreneurs have been dealing with as a result of lockdowns in many countries. The objective of this chapter is to provide a guideline to entrepreneurs on how the development of cognitive skills and abilities can assist them in the current situation and in the future. An analysis of current strategies that were used globally will be evaluated, and successful methods of creativity and innovation will be used to develop a framework. The literature in this chapter indicated the need for integrating cognitive ability when implementing creativity and innovation in enterprises. Cognitive function focuses on working memory and certain behaviours when performing a particular action to achieve a certain goal.

Section 2
Innovation

Is has now become widely recognized that our world has become increasingly complexified and immersed in societal issues that require a diversity of perspectives to effectively engage. Collective innovation holds the promise of enabling a plurality of

views necessary for creating effective innovation strategies. Yet collective processes are beset by a range of issues that are challenging for scholars, researchers, and practitioners to understand and effectively manage. Building on the complexity typologies theory as augmented by insights from the field of systemic design, the authors propose a missing element to enable collective action initiatives – identified as meta-cognitive skills critical to group collaboration and collective innovation processes. They illustrate the proposal with well-known examples and some of the latest studies in the field. They conclude by proposing next steps that educators or practitioners might employ in their own educational, curriculum design, and practice contexts – recognizing the key elements of praxis that connects them all.

The global COVID-19 pandemic has created opportunities for the emergence of new entrepreneurial innovations. This has resulted in many individuals being left with no choice but to pursue entrepreneurial ventures because they have either lost their jobs, or breadwinners have succumbed to the virus. The objective of this chapter is to outline the entrepreneurial mindset in detail and how shifts are required to cope with today's uncertain times. An analysis of current extant literature was explored, and cogent findings were used to develop a theoretical framework for entrepreneurial innovation in a post-pandemic society. The literature in this chapter indicated the need for understanding the impact of the current global pandemic on entrepreneurial innovation in order to provide recommendations for policymakers that can stimulate creativity, innovation, and better education in the post-pandemic era.

The gap between expected and actual skillsets to drive workforce creativity and developing innovative products and services in recent times suggests the need for a thorough review of educational policy. The required level of creativity and innovation could be stimulated through educational policy review and effective implementation of action plans to meet expectations in the fourth industrial revolution. A literature review approach was adopted to examine the issues in current education system, as well

as the emerging trends within the system to promote creative learning. The findings show that discipline-specific instructional strategies propelled by technological innovations (educational virtual reality games) are essential in stimulating creativity and innovation. Gamification in learning pedagogies not only promotes important academic learning but also builds the skills required for success in the 21st century.

Individuals are looking for ways to continue to contribute their skills, to gain value, and to improve their employment prospects. On the other hand, employers face important choices as to whether to use technological advances to drive efficiency and reduce costs or to explore how to harness technology to reshape jobs in ways that deliver more value and meaning. This has resulted in educators and policy makers facing calls to rethink how we should prepare and train people for a changing workplace and what paths people can take to gain skills over a longer career with multiple chapters of career re-engineering. The objective of this chapter is to outline the dimensions of the future of work and the corresponding questions that they pose. An analysis of current extant literature was explored, and practical answers to the questions were used to develop a theoretical framework for teaching how to work with people (in person and remotely) and technology (artificial intelligence and robots) using creativity and innovation in a post-pandemic society.

The need of using creative and innovative education strategies in the low-income consumer setting has never been felt until this wake of the pandemic to assist for sustainable well-being. In this chapter, the role of improved education as a collective innovation measure in promoting awareness of the inclusive cover to the low-income consumers in the emerging countries will be perused in the wake of the 2019-nCoV virus in their struggle to cope with the unexpected management of risks in a more calculated way. The study provides the education challenges in the low-income insurance area posed to both consumers and providers and explains how their involvement is important through innovative programmes in the low-income cover niche such as digitalization amongst others. Since education indeed plays a huge role in enhancing participation in this field of low-income cover to entail sustainability, it will be wise that the policymakers, government officials, and others work closely with their consumers so that this problem can assist for sustainable livelihoods.

Foreword

I have been asked to wax witty and wise in the foreword of this book. I want to believe it is because I am an all-around creative guy. It probably has more to do with my work as the Chief Steward of World Creativity & Innovation Week (April 15-21) (WCIW) and World Creativity & Innovation Day (April 21) (WCID).

I am so excited about this book. Actually, I am so excited about any book that furthers the conversation about creativity. I've been interested in creativity for decades.

In the history of our world, we have not been academically researching creativity very long. Yes, creativity has been around since the first person solved the first problem, but no academics were there to identify the creative traits employed, the creative process followed or the creative environment supporting it.

We've been researching philosophy for thousands of years, same with science and medicine and mathematics. We've been researching creativity for about 70 years. Creativity researcher Gerard Puccio notes that "some of the scientific foundation for looking at creativity had its start during World War II, when psychologists studied Air Force pilots and their survival skills. Additionally, psychologists worked with spies at the Office of Strategic Services, looking at the kinds of skills that would predict survival out in the field."

My position with WCIW/D gives me a unique perch from which to watch the world wrestle with wicked problems. I connect with scientists, politicians, educators, and others who are concerned with the wicked problems that face our world.

I am thrilled to have connected with Dr. Ziska Fields who is leading this wicked problem collection. It was design theorists Rittel and Webber who coined the term "wicked problem" in 1973 to refer to problems that are difficult to define and inherently unsolvable.

WCIW&D is a global organization designed to encourage, empower, and celebrate all people around the world. We need that. We need lots of that.

Creative thinkers know that great minds *don't* think alike. As General George S. Patton said, "If everybody's thinking alike, then somebody isn't thinking."

I've been teaching creativity for more than a decade. I understand creativity. I teach the creative power to solve wicked problems. There's nothing better.

You may think you have a pretty good understanding of what creativity is. You see it, you hear about it, and maybe you even practice it. But what exactly makes something creative? And how can anyone get better at creativity? We need some common ground on creativity. We need a few rules to start.

Creativity is a mindset, a skill set, and a toolset. It's a framework for approaching problems.

Creativity involves brainstorming a lot of ideas, seeking wicked novelty, deferring all judgment, and building off the ideas of others. You can do that. But do you? Will you?

When it comes down to it, creativity is about going beyond your first right answer and discovering the second, third, and 124th. You can do that. But do you? Will you?

Research shows that we are born creative. All of us. Yes, you too. As children, we own the creative mindsets but schools and society and life force us into compliance. Our internal voice of judgment takes control of our minds. We move through life on constant deadline where done is good and good is enough. Think about how often in your life there is not enough time or benefit for creative problem finding or problem-solving.

Wicked creativity needs wicked attention. Wicked creativity needs a commitment to see the world differently, to keep an open mind to possibility. There is no such thing as *the right way.* There are many ways. There is no such thing as settled science. There is science. There is conversation and collaboration and brainstorming and prototyping and iterating and other creative tools that move us toward better solutions … a better world.

World Creativity & Innovation Week/Day is dedicated to empowering people everywhere to use creative problem-solving to make the world a better place and make the world and your place in it better, too. We celebrate the promise of this book's title. We celebrate you and your ability to use creativity to solve wicked problems.

To intentionally misquote Steve Jobs, Here's to the Global Creatives. Because the ones who are crazy enough to think they can solve the inherently insolvable wicked problems of our world are the ones who ultimately will.

Jim Friedman
Miami University, USA

Preface

To make the world a better place, it is time

to inspire new action, create novel ideas, make new decisions, solve problems in new ways, do something new, support new thinking, [and] partner with new people. ~Segal, n.d.

Creating opportunities to inspire and empower people to use and celebrate their creativity and innovation through collaborative expertise and partnerships worldwide could make this happen.

Creativity is a crucial cognitive skill that each one of us possesses. However, we need to practice our creativity constantly so that we may become more competent in creative thinking and problem solving, coming up with new ideas, and doing things differently to how they have been done before. In agreement, Cropley (2016) summed this up by stating that "creativity is about solving problems and satisfying needs by developing novel and useful solutions – in other words, creativity is all about the aptitudes, processes, and environmental factors that help us to generate new and useful products" (p. 630). Steve Jobs believed that "creativity is just connecting things" (Wolf, 1996, para. 133). The key, however, is in permitting oneself to be creative. Jobs added, "When you ask creative people how they did something, they feel a little guilty because they didn't do it; they just saw something. It seemed obvious to them after a while" (Wolf, 1996, para. 133). Creativity should be used and celebrated.

The processes of creativity and innovation overlap, though they are still distinct and different processes. In creativity, ideas are developed, and in innovation, ideas are applied practically to add value to products or services. Innovation is dependent on creativity and novelty. Puccio and Cabra (2010) explain that innovation results from interaction among people, processes, and the environment. Without innovation, creativity is simply a lot of new ideas in the minds of people. These ideas therefore need to be put into action through whole-brain thinking—the application of both divergent and convergent thinking—to result in innovation through engagement of creativity. Innovation should be celebrated.

Creativity and innovation are some of the critical work skills identified by the World Economic Forum. Creativity can be taught, which means that education plays a crucial role in developing these competencies. Teachers therefore have a responsibility to understand creativity and plan and deliver the curriculum in ways that will inspire and teach students to practice and apply their creativity, so that they may turn their creativity into innovative products and services. Creativity can be taught simultaneously with the actual content required by schools and higher education programmes, along with various technological tools. New methods of teaching that both draw on and train creativity and innovation should be encouraged. Education should be used and celebrated as a means to enhance creativity and innovation in the world.

The scholarly value of this publication is self-evident because of the increased emphasis being placed on the role of creativity, innovation, and education in the world today. The key objective of this publication is to understand creativity and innovation, how education can develop these cognitive abilities and skills, and how education can be improved to meet future challenges and demands. There is a relationship between education, creativity, and innovation, with an essential link to technology. This volume seeks to address and how these relationships can be enhanced.

The book's title celebrates the World Creativity and Innovation Week (WCIW; April 15–21), and World Creativity and Innovation Day (WCID; April 21) held in 2021 (the two are often combined in the abbreviation WCIW/D). The world came together to inspire people to be more creative and innovative in their homes, schools, communities, and countries. Record celebrations have been seen worldwide since WCIW/D started celebrating creativity and innovation 20 years ago.

The primary intended audience is scholar-practitioners who need suitable reference material regarding the publication's subject matter, as outlined. The secondary intended audience is managers, organization development specialists, consultants, educationalists, policymakers, and undergraduate/graduate business students who require the same reference material. While the book has academic rigor, at the same time, non-academics and non-specialists can benefit from reading it. Therefore, it will be appealing and accessible to the public, encouraging everybody to celebrate global creativity, innovation, and education.

This book consists of nine chapters, divided into three sections. The first section, "Creativity," consists of three chapters.

I have contributed the first chapter, titled "World Creativity and Innovation Celebrations," in which I explore the fact that the world faces wicked and super wicked problems such as inequality, persisting poverty, hunger, the effects of climate change on the most vulnerable, biodiversity and keystone species loss, and

food insecurity, to name a few. I advocate that our imaginations, the driving force behind creativity, can change the world for the better by solving complex problems and by adding value through innovation. The primary purpose of this chapter is to explain why creativity and innovation need to be celebrated annually worldwide. The purpose was achieved by describing what WCID and WCIW are, explaining the reasons for celebrating WCIW/D annually, exploring how different countries celebrate WCIW/D in April 2021, and providing recommendations for celebrating WCIW/D in the future.

Chapter 2, titled "Creative Leadership: A Multidisciplinary Approach to Creativity," was contributed by Fatma Ince from Mersin University, Turkey. The chapter is based on psychology, a field in which the deepest existence debates are held, and sheds light on other scientific fields while accommodating different perspectives on creativity. Understanding leadership from a creative thinking perspective is one of the ways of understanding, predicting, directing, and guiding human behaviors, both from an artistic and scientific point of view. Goals such as innovation, creativity, and sustainability make an awareness process necessary due to the impact of rapidly changing technology on business and social life. The chapter thus emphasizes the change of thought processes required and highlights the technological developments that guide this change. The creative leadership term is then discussed from a multidisciplinary perspective. In this way, the chapter aims to make the new dynamics of the changing competitive environment more easily understood.

Chapter 3, titled "Creativity and Innovation: The Need for Cognitive Skills and Abilities in Developing Future Entrepreneurs," was contributed by Khalida Akbar from Durban University of Technology and Ayanshola Ayandibu from the University of Zululand, South Africa. The authors start by stating that the current global pandemic has given rise to the need for innovation and creativity from entrepreneurs if they are to sustain their enterprises in an ever-changing environment. Entrepreneurs have had to deal with lockdowns in many countries, among other challenges that have arisen as a result of the pandemic. This chapter aims to provide a guideline to entrepreneurs on how cognitive skills and abilities can assist them in the current situation and in the future. An analysis of current strategies used globally is evaluated, and successful creativity and innovation methods have been used to develop a framework. The literature in this chapter indicates the need for integrating cognitive ability when implementing creativity and innovation in enterprises. Cognitive function focuses on working memory, certain behaviors when performing a particular action to achieve a specific goal.

The second section, "Innovation," consists of two chapters.

Chapter 4, "Collective Innovation for Complex Challenges: Engaging With Meta-Cognitive Skills and Patterns," was contributed by Goran Matic from the Doctoral College, University of Brighton, and Ana Matic from Strategic Foresight and Innovation, OCAD University, Canada. These authors note that it has become widely recognized that our world has become increasingly complex and immersed in societal issues that require diverse perspectives to engage with and address the issues effectively. Collective innovation holds the promise of enabling a plurality of views necessary for creating effective innovation strategies. Yet collaborative processes are beset by a range of challenging issues for scholars, researchers, and practitioners to understand and effectively manage. Building on the complexity typologies theory, augmented by insights from the field of systemic design, they propose a missing element to enable collective action initiatives, identified as metacognitive skills critical to group collaboration and collaborative innovation processes. They illustrate their proposal with well-known examples and some of the latest studies in the field. They conclude by proposing the steps that educators or practitioners may employ in their own educational, curriculum design, and practical contexts—recognizing the critical elements of praxis that connect them all.

Chapter 5, "Entrepreneurship Innovation," was contributed by Ayansola Olatunji Ayandibu and Makhosazana Faith Vezi-Magigaba from the Department of Business Management, University of Zululand, South Africa. For them, the COVID-19 pandemic has created opportunities for the emergence of new entrepreneurial innovations. This has resulted in many individuals being left with no choice but to pursue entrepreneurial ventures because they had either lost their jobs or breadwinners had succumbed to the virus. This chapter aims to outline the entrepreneurial mindset in detail and how shifts are required to cope with today's uncertain times. An analysis of the current literature has been explored, and cogent findings were used to develop a theoretical framework for entrepreneurial innovation in a post-pandemic society. The literature in this chapter indicated the need to understand the impact of the current global pandemic on entrepreneurial innovation to provide recommendations for policymakers that can stimulate creativity, innovation, and better education in the post-pandemic era.

The third section, "Education," consists of four chapters.

Chapter 6, "Stimulating Creativity and Innovation Through Apt Educational Policy," has been contributed by Sulaiman Olusegun Atiku from the Namibia University of Science and Technology, Windhoek, and Richmond Anane-Simon of Management Studies, Pentecost University, Ghana. They start the chapter by exploring the gap between expected and actual skill set to drive workforce creativity and developing innovative products and services in recent times, which suggests a thorough review of educational policy. The required level of creativity and innovation

could be stimulated through educational policy review and practical action plans to meet expectations in the Fourth Industrial Revolution. A literature review approach was adopted to examine the issues in the current education system and the emerging trends within the system to promote creative learning. The findings show that discipline-specific instructional strategies propelled by technological innovations (educational virtual reality games) are essential in stimulating creativity and innovation. Gamification in learning pedagogies promotes meaningful academic learning and builds the skills required for success in the 21st century.

Chapter 7, "Teaching How to Work With People (in Person and Remotely) and Technology (Artificial Intelligence and Robots) Using Creativity and Innovation," was contributed by Ayansola Olatunji Ayandibu from the Department of Business Management, University of Zululand, South Africa.

The chapter opens by stating that individuals are looking for ways to continue contributing their skills, gain value, and improve their employment prospects. On the other hand, employers face fundamental choices such as to whether to use technological advances to drive efficiency and reduce costs or explore how to harness technology to reshape jobs in ways that will deliver more value and meaning. This has resulted in educators and policymakers facing calls to rethink how we should prepare and train people for a changing workplace and what paths people can take to gain skills over a long career with multiple chapters of career re-engineering. This chapter aims to outline the dimensions of the future of work and related questions. An analysis of current extant literature has been undertaken. Practical answers to the questions have been used in developing a theoretical framework for teaching how to work with people (in person and remotely) and technology (artificial intelligence and robots) using creativity and innovation in a post-pandemic society.

Chapter 8, "Does the Low Income Affect the Development of One's Innovative Ability in the Education Niche?" was written by Bibi Zaheenah Chummun from the University of KwaZulu-Natal, South Africa. She explains that never before has the need to use creative and innovative education strategies to assist in sustainable well-being for low-income consumers been felt as strongly as it has in the wake of the pandemic. In this chapter, the role of improved education as a collective innovation measure in promoting awareness of inclusive cover to the low-income consumers in emerging countries has been perused in the wake of the 2019-nCoV virus. The study provides the education challenges posed to both consumers and providers in the low-income insurance arena and explains how their involvement is essential through innovative programs and interventions, such as digitalization, in the low-income-cover niche. Since education indeed plays a huge role in enhancing participation in this field to entail sustainability, it would be wise for policymakers, government officials, and others to work closely with their consumers so that a solution to this unexpected wicked problem can assist in creating sustainable livelihoods.

Chapter 9, "Perceiving Sustainability: A Workshop Concept for Introducing the SDG-Framework and Creating Awareness of Sustainability," was contributed by Anja Herrmann-Fankhänel, Innovation Research and Technology Management, Chemnitz University of Technology, Germany. She states that individuals are exhorted by Agenda 2030 to be an active part of sustainable development. However, sustainable development is a complex and strategic topic, and individuals struggle with acceptable behavior. For example, although the Sustainable Development Goals (SDGs) are a framework to organize the topic's complexity, the level of information often is beyond individuals' scope of life. Consequently, people lack essential basics and ideas of how to act in the sense of sustainable development. To tackle this challenge, a workshop including a structural constellation has been conceptualized. Based on the experiential learning process, which includes feeling, reflecting, thinking, and acting, participants access the SDG framework through elements linked to personal experience. This is possible as the workshop uses the subgoals and indicators of the SDG framework used to monitor countries' global achievements. Workshop participants create awareness and build knowledge about sustainable development, which will change their behavior and lead to innovation.

In conclusion, this editor is satisfied that the book will add a greater understanding of the role of the WCIW/D, creativity, innovation, and education and its impact on the world and the 2030 SDGs. The nine chapters obtained and shared multidisciplinary views from South Africa, Turkey, Canada, Namibia, Ghana, and Germany. The book's novel ideas, concepts, and approaches will help in the search for better solutions, greater collaboration, and celebrations of creativity, innovation, and education.

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REFERENCES

Cropley, D. H. (2016). Creative products: Defining and measuring novel solutions. In J. Pluker (Ed.), Creativity and innovation: Theory, research and practice (pp. 61–74). TXPrufrock.

Johnson, C. (2017, January 26). *17 Famous Quotes on Creativity to Inspire Your Marketing*. Carla Johnson. https://www.carlajohnson.co/17-famous-quotes-creativity-inspire-marketing/

Puccio, G. J., & Cabra, J. F. (2010). Organizational creativity: A system approach. In J. C. Kaufman & R. J. Sternberg (Eds.), *The Cambridge handbook of creativity* (pp. 145–173). Cambridge University Press. doi:10.1017/CBO9780511763205.011

Segal, M. (n.d.). *Innovation Excellence*. World Creativity & Innovation Week.

Wolf, G. (1996, February 1). Steve Jobs: The Next Insanely Great Thing. *Wired*. https://www.wired.com/1996/02/jobs-2/

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Introduction

The inspiration for this book is derived from the role that World Creativity and Innovation Week (WCIW) and World Creativity and Innovation Day (WCID) play around the globe. In 2021, WCIW/D commemorated 20 years of inspiring countries to celebrate their creativity and innovation. The theme for the 2021 celebrations was "Education," which is more relevant than ever and the changes that had to be made to continue education across the world as a result. Chapter 1 discusses WCIW/D and the 2021 celebrations.

The World Economic Forum (Palmer, 2020) indicated that of the top six skills needed in the workplace by 2025, critical to achieving the 2030 Sustainable Development Goals (SDGs), five are cognitive skills. These are (a) analytical thinking and innovation; (b) active learning and learning strategies; (c) complex problem-solving; (d) critical thinking and analysis; and (e) creativity, originality, and initiative. A clear link can be seen between these skills and the 2021 WCIW/D celebration of creativity, innovation, and education. By 2030, cognitive flexibility, digital literacy, computational thinking, judgment and decision making, emotional and social intelligence, and a creative and innovative mindset will be absolutely crucial. These provide yet another reason why creativity and innovation remain essential in human development, irrespective of the growth of artificial intelligence, STEM (science, technology, engineering, and mathematics), robotics, machine learning, blockchain, big data, and more advanced technology. Humans' ability to think differently, creatively, and innovatively will drive the future and new ways of education. This is why it should be celebrated, and the WCIW/D offers this opportunity on an annual basis.

There is no one definition for creativity, as it has been challenging to explain the concept satisfactorily from all the diverse viewpoints and disciplines. Various definitions therefore exist, but common to most is the notion that creativity starts with imagination.

With regard to the occurrence of creativity, George Bernard Shaw explained that '*Imagination is the beginning of creation. You imagine what you desire; you will what you imagine, and at last, you create what you will*' (as cited in Murray,

2014, para. 1). Edward de Bono confirmed that '*There is no doubt that creativity is the most important human resource of all. Without creativity, there would be no progress, and we would be forever repeating the same patterns* (as cited in Christensen, 2016, para. 3).

Creativity is the bridge between imagination and innovation. Innovation cannot happen without creativity, as ideas are useless if these cannot be implemented (Levitt, 2002). Innovation can be defined as the commercialization of new products and services to create value for customers. Most innovation involves doing things better every day, not necessarily radical innovation to create something completely new and different.

It is possible to teach creativity and innovation (Ferguson, 2014), and education is the method to develop and enhance creative and innovative thinking and action. Teaching takes effort, as it needs to be planned carefully. Feldhusen and Treffinger (1980, as cited in Fasko, 2001), made several recommendations for establishing a classroom environment conducive to creative thinking: Support and reinforce unusual ideas, use failure as a learning experience; adapt to student interests and ideas; allow time for students to be creative, as not all creativity occurs immediately and spontaneously; and create a climate of mutual respect and acceptance between students.

The book is divided into three sections. Section 1 focuses on creativity, Section 2 shares ideas on innovation, and Section 3 centers around education. The book follows a multidisciplinary approach linking creativity with psychology, leadership, organizational environment, entrepreneurial development, and cognitive skills development. This multidisciplinary approach is critical in the study of creativity, as the concept is not confined to one discipline only. Creative leadership is an essential aspect, as leaders set the tone for creativity and innovation. In addition, there is a great need to develop cognitive skills, such as creativity and innovative thinking. Entrepreneurial innovation is discussed as a vital ingredient for successful entrepreneurship. As education plays an important role in the development of future entrepreneurs, training that stimulates entrepreneurial abilities is also a crucial aspect.

If creativity is to be used for good and to ensure value for all involved, then innovation is an imperative. Collective innovation has become a critical focus area, especially in creating effective innovation strategies for the complex world in which we live. Metacognitive skills that enable collective action initiatives have been identified as the missing element critical for group cooperation and collaborative innovation processes. This topic is discussed in the book.

The role and ways of teaching and learning have changed dramatically since the beginning of 2020. Therefore, formal strategies are required to stimulate creativity and innovation, and there is a need for better education policy to prepare students for the demands of an ever-changing workplace. Using technology, artificial intelligence,

and robotics requires skills development. Practical answers to burning questions have been used in developing a theoretical framework for teaching how to work with people (in person and remotely) and with technology (artificial intelligence and robots) using creativity and innovation in a post-pandemic society. It is furthermore important to be cognizant of the education challenges in low-income segments of the population. Innovative programs and interventions, such as digitalization, will greatly increase low-income communities' involvement in arenas such as financial services that will ultimately benefit and uplift them. Another important aspect is that people lack essential basic knowledge of sustainable development and how to act to ensure the needs of future generations may be met. To tackle this challenge, workshops are needed that will allow people to access the SDG framework through elements linked to personal experience based. This experiential learning process includes feeling, reflecting, thinking, and acting, all of which require creativity.

The publication has scholarly value based on critical skills for 2030 (and beyond), starting today. It is hoped that this book will be valuable to all who read it.

Ziska Fields, Editor

REFERENCES

Christensen, T. (2016). *Who needs creativity most?* Retrieved April 1, 2021 from https://creativesomething.net/post/145507186738/who-needs-creativity-most

Fasko, D. Jr. (2001). Education and Creativity. *Creativity Research Journal*, *13*(3&4), 317–327. doi:10.1207/S15326934CRJ1334_09

Ferguson, E. (2014). *Can creativity be taught*? Retrieved April 1, 2021 from https://books.google.co.za/books?id=MUnvoQEACAAJ

Klymkowsky, M. (2018, September). Can we talk scientifically about free will? *Sci-Ed*. http://blogs.plos.or/scied/2018/09/15/can-we-talk-scientifically-about-free-will/

Levitt, T. (2002). Creativity is not enough. *Harvard Business Review*. Retrieved April 1, 2021 from https://hbr.org/2002/08/creativity-is-not-enough

Murray, G. R. (2014). George Bernard Shaw, Imagination, And The Leaders We Get. *Psychology Today*. Retrieved April 1, 2021 from https://www.psychologytoday.com/intl/blog/caveman-politics/201411/george-bernard-shaw-imagination-and-the-leaders-we-get

Palmer, B. (2020). *Here are the top 10 job skills for 2025*. https://www.pcma.org/top-job-skills-2025/

Section 1
Creativity

Chapter 1
World Creativity and Innovation Celebrations

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ABSTRACT

The World Creativity and Innovation Week (WCIW) is celebrated annually (15-21 April). The mission of WCIW is to encourage people to use new ideas, make new decisions, and take new steps towards making the world better through creativity. The purpose of this chapter was to explain what World Creativity and Innovation Week (WCIW) and World Creativity and Innovation Day (WCID) entails. Three research objectives were identified to meet the purpose of the chapter: (1) to explain why creativity, innovation, and education are important; (2) to explore how WCIW/D was celebrated across the six continents focusing on the three countries per continent that celebrated WCIW/D the most; and (3) to make recommendations to celebrate the WCIW/D in the future. The chapter showed how different countries celebrated education, creativity, and innovation and provided ideas on enhancing learning and fun in the classroom.

INTRODUCTION

When the headline "Canada in Creativity Crisis" appeared in the *National Post* on May 25, 2001, Marci Segal was inspired to change the general thinking around creativity (World Creativity & Innovation Week (WCIW), 2021). Having studied at the International Center for Studies in Creativity at Buffalo State University, she understood the power of creativity and people's natural creative ability. Segal knew

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that solving the creativity crisis in Canada would entail first finding the problem, brainstorming to find ideas, deciding on the best ones, and taking new action based on the ideas generated, which would positively minimize the country's creativity crisis. She felt that increasing the awareness of the power of creativity could be achieved by establishing a creativity day to be celebrated worldwide, similar to the global celebrations at the turn of the millennium, and thus World Creativity and Innovation Day (WCID) was born. The main idea behind this day was to push countries into creative multidisciplinary thinking at both individual and group levels. Through collaboration, countries could celebrate creativity and innovation internationally to inspire and enable people to build better communities, countries, and the world together (WCIW, 2021).

WCID garnered the attention of the United Nations (UN), which agreed with Segal that creativity and innovation can change the world for the better for all, and so the UN General Assembly adopted a resolution to celebrate WCID annually in 2017. WCID is celebrated every year on April 21. Collaboration between various countries can help to develop better solutions to global problems. Albrectsen (2017) states that collaboration among governments, businesses, civil societies, and academia will be the key to achieving the Sustainable Development Goals (SDGs), as set out by the UN, in 2030. The world has to collaborate more using rapid technological advances to offer new opportunities and new solutions. Albrectsen explains that this sounds easy; however, it is very complicated to get different countries and sectors to be openminded to collaboration, not be afraid to take risks, to cooperate in new ways, and to share experiences with other countries and sectors to work together more effectively. Bulche (2017) agrees that the world needs to work together to achieve sustainable development, including solving wicked and super wicked problems.

The world faces wicked and super wicked problems such as inequality, persisting poverty and hunger, the effects of climate change on the most vulnerable, biodiversity and keystone species loss, and food insecurity, to name a few (Walls, 2018). Wicked problems are difficult to solve, and super wicked problems even more so. Wicked problems can be described as problems that can be defined and explained in multiple ways; there is no one solution; solutions are either good or bad and can lead to unexpected and irreversible consequences over time. Wicked problems, such as the UN's 17 SDGs, seem almost impossible to solve.

Nestlé, according to Bulche (2017), suggested three ideas that encourage collaboration in the world to achieve the SDGs. For starters, each company (or country or sector) must identify areas in which they can have the most impact on the 17 SGDs; for example, higher education (HE) institutions can focus on education (the fourth most crucial SGD) and hospitals can focus on health (the third most important SDG). Then, each company (country or sector) should leverage their specific comparative advantage to positively impact the SDG (or SDGs) they have selected. What will be

critical is that the impact should include global implementation capacity, efficiency in execution, innovation and research capabilities, and performance efficiency. After that, the most vital issue is to think beyond one's own company, country, or sector to observe, appreciate and collaborate to make the interconnected world a better place for all.

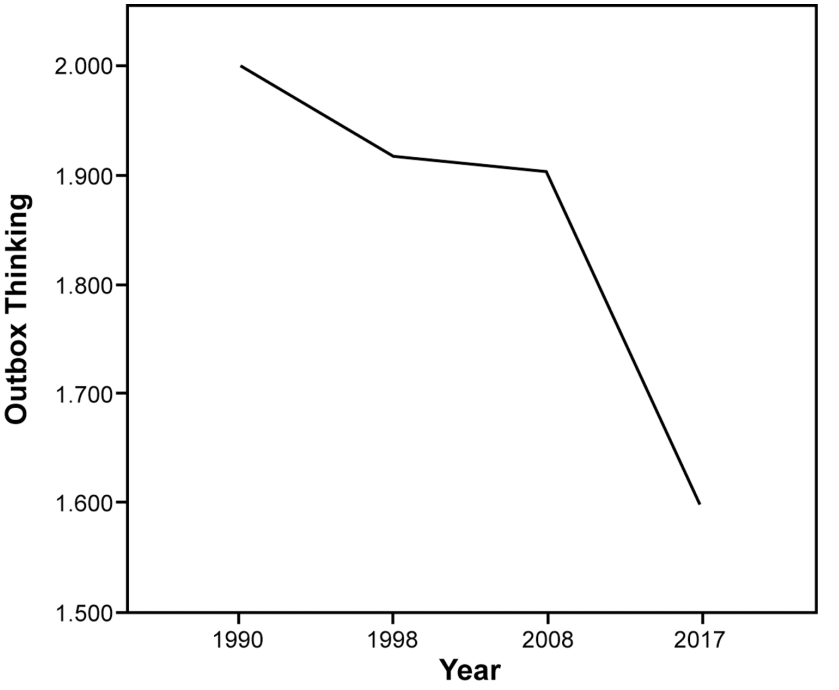
The purpose of this chapter is to explain what WCIW and WCID (or combined, WCIW/D) entail. Three research objectives were identified to meet this aim: (a) to explain why creativity, innovation, and education are important; (b) to explore how WCIW/D has been celebrated across the six inhabited continents, focusing on countries that were most prolific in celebrating WCIW/D; and (c) to make recommendations for celebrating WCIW/D in the future.

BACKGROUND

After the "Canadian Creativity Crisis," Florida (2004) identified a similar problem in the United States in his article titled "America's Looming Creativity Crisis." He wrote that this could have a devastating impact on the country's competitive advantage, stating that its "growth miracle turns on one key factor: its openness to new ideas, which has allowed it to mobilize and harness the creative energies of its people" (Florida, 2004, para. 2). The Global Creative-Class Index, which measures the number of people employed in creative job categories in each country divided by the country's total number of workers, ranked the U.S. 11th in the world at the time, with brain drain potentially worsening the problem (Florida, 2004).

The view that the U.S. was experiencing a creativity crisis was supported by Prof. Kyung Hee Kim in her 2011 article, "The Creativity Crisis: The Decrease in Creative Thinking Scores on the Torrance Tests of Creative Thinking." Kim stated that since the mid-90s, imagination in the U.S. had been declining, while IQ continued to rise (Hopkins, 2018). Hopkins (2018) reported that Kim, who worked with the "Father of Creativity" Dr. Ellis Paul Torrance, indicated that until 1990, creativity had been on the increase, but after that, somewhere between 1990 and 1998, something happened, and it started declining. She speculates that this "something" could have been a result of the schooling system that required more conformity, thus causing the imaginative aspects of creativity to be negleged, as these require non-conformity and originality. Since the 1990s, U.S. schools were no longer supporting curiosities and passions. Students were encouraged to avoid risk taking. There were fewer opportunities to collaborate, and instruction time on non-tested subjects was decreased or eliminated (Kim, 2017). Kim also mentioned that creativity suffers and declines with more depression, anxiety, and passive play. Figure 1 illustrates the U.S. decline of creativity since 1990.

Figure 1. Changes in outbox thinking, United States, 1990–2017
Source: Kim (2017)



According to the Global Creativity Index by Country (Dutta et al., 2020) the most creative country is Switzerland, followed by Sweden, the United States, the United Kingdom, and Netherlands fifth. It appears that the action taken to improve creativity in Canada and the U.S. paid off, as there was an increase in creativity and innovation, according to these rankings. The Global Creativity Index furthermore indicates in which disciplines countries lack creativity, the potential of fostering creativity through education and training, the creativity techniques used and different types of improvisation, and algorithms for approaching problems.

It seems evident that the world needs creativity and innovation to thrive and solve wicked problems through sustainable and innovative solutions. Imagination and creativity can offer better ways to solve wicked and super wicked problems, as they enable one to examine a question from various perspectives. Global collaboration can increase the diversity of ideas and different ways to look at problems.

IMAGINATION, CREATIVITY, AND INNOVATION

Ruysenaar (2021) wrote that higher order thinking becomes important when problems become more complex. Higher order thinking refers to a person's ability to synthesize, analyze, reason, comprehend, apply, and evaluate (Thomas & Thorne, 2017). Higher order thinking utilizes the whole brain, especially during the creative problem-solving process. Higher order thinking is thus key to effective collaboration and creative problem-solving.

Our imaginations, the driving force behind creativity, have changed the world for the better by solving complex problems and by adding value through innovation. However, we cannot ignore that the role our imagination and creativity played in our evolutionary past was not necessarily for the better – this same creativity led to unsustainable business practices and innovations, wars, and crimes. This chapter focuses on the "good" and not the "bad and the ugly" just described, that is, the positive impact of creativity and innovation in the world.

The difference between imagination, creativity, and innovation has been explained by Christensen (2015), who stated that "imagination is about seeing the impossible, or unreal. Creativity is using imagination to unleash the potential of existing ideas in order to create new and valuable ones. Innovation is taking existing, reliable systems and ideas and improving them" (para. 4).

The value of these three cognitive processes cannot be denied. According to WCIW (2021), creativity is essential for the world, and that nearly everything around us initially arose as a result of a creative act. To collaborate requires creative minds to think differently about companies, countries, and sectors and their role in sustainable development. Let us first look at imagination, creativity, and innovation in more detail before exploring collective/collaborative creativity and innovation.

Imagination

According to GoodTherapy (2015), imagination involves "dreaming up novel scenarios, fantastical stories, and visual representations" (para. 2). According to Dr. Murray Hunter, we use eight different types of imagination daily (teachthought, n.d.):

- *Effectuative imagination* combines information to synergize new concepts and ideas.
- *Intellectual (or constructive) imagination* develops hypotheses from different pieces of information or pondering over various issues of meaning.
- *Imaginative fantasy* (people mostly describe imagination in this way) creates and develops stories, pictures, poems, and stage plays, for example.

- *Empathy imagination* enables a person to know emotionally what others are experiencing from their frame and reference.
- *Strategic imagination* is used to create a vision by recognizing and evaluating opportunities.
- *Emotional imagination* refers to the manifesting of emotional dispositions and extending them into emotional scenarios.
- *Dreams* are an unconscious form of imagination made up of images, ideas, emotions, sounds, smells, and sensations during certain sleep stages.
- *Memory reconstruction* takes place when memories of people, objects, and events are retrieved.

Lev Vygotsky, a Soviet psychologist, believed that creative imagination uses symbolic play objects (Starko, 2018). He distinguished between reproductive and combinatory imagination as the beginning stage but not as the peak of creativity. Reproductive imagination refers to the images individuals imagine from memory. Combinatory imagination occurs when individuals combine elements from previous experiences into new situations or behaviors that characterize creativity. Vygotsky saw adult creativity as a conscious thought process that changes and combines ideas in specific social conditions.

Imagination can be seen as a tool for positive change and empathy, but it is often ignored. Yet, when mastering imagination, one can set goals, define the steps needed to achieve goals, anticipate problems and solutions, try various solutions mentally without any risk. Imagination leads to creativity.

Creativity

Creativity is a cognitive skill and the bridge between imagination and innovation. Plunker et al. (2010) conducted a synthesis of 100 published journal articles to define creativity. They concluded that creativity is "the interaction among aptitude, process, and the environment by which an individual or group produces a perceptible product that is both novel and useful as defined within a social context" (p. 90).

Vygotsky (1967, as cited in Starko, 2018) stated that creativity is situated in a particular time and place, develops from needs, and depends on the availability of resources. He further explained that creativity emerges through interactions with others. Individuals use creative processes "internally to transform incoming social and cultural messages into a mind and personality" and "externally to communicate new ideas" (Starko, 2018, p. 59). The following characteristics are associated with creative people:

- They engage in imaginative play.

- They have passion for their activities.
- They daydream.
- They take time for solitude.
- They are intuitive and work through insight.
- They are open to experiences.
- They are sensitive.
- They can turn adversity into advantage.
- They think differently and take risks. (Starko, 2018, pp. 103–115)

Csikszentmihalyi (1996, as cited in Starko, 2018) interviewed nearly 100 extraordinary creators and listed 10 dimensions of complexity on which creative individuals appear to **simultaneously develop both ends of a continuum.**

Figure 2. The 10 dimensions of complexity
Source: Own compilation based on Starko (2018)

It has been challenging to find one definition that explains the multidisciplinary nature of creativity. The consensus of widely recognized definitions suggests that creativity involves generating high-quality ideas or products that are both novel and valuable or appropriate within the task context. Torrance (1995, cited in Creative Oklahoma, 2021) stated,

Creativity defies precise definition. This conclusion does not bother me at all. In fact, I am quite happy with it. Creativity is almost infinite. It involves every sense

– sight, smell, hearing, feeling, taste, and perhaps the extrasensory. Much of it is unseen, nonverbal, and unconscious. Therefore, even if we had a precise concept of creativity, I am certain we would have difficulty putting it into words. (p. 43)

Thus, creativity can be defined in various ways depending on the discipline.

In *business,* creativity is used to address and overcome business challenges through effective leadership. The business challenges are used to inspire people to think differently and help people and teams find innovative solutions that can add value to the products and services of businesses. Creativity plays a critical role in creating competitive advantages. Felber (2020) advocated that "creativity is the No. 1 tool that can allow you to adjust and conquer hardships. If you can find a way to value creativity in your business model, you may find yourself excelling, even in difficult times" (para. 6). Wingard (2020) asserts that many leaders fail to cultivate this essential quality in their leadership and within their organizations.

The *arts* are often viewed as synonymous with creativity, and most people associate creativity with art-making. Art, however, in itself, is not creativity. Creativity is a cognitive skill needed to create art pieces (for example, painting, poetry, sculpture, fashion) that are aesthetically pleasing and even challenge the norms and thinking in societies. Girija (as cited in Gharib, 2020) stated that "anything that engages your creative mind—the ability to make connections between unrelated things and imagine new ways to communicate—is good for you" (para. 8). Art empowers us to use our imagination, think outside society's norms, generate various ideas, and use multiple art forms as expressions.

In *psychology,* the human mind and its functions are studied, and this includes creativity. Creativity is an integral part of understanding psychology. Creativity is a vital form of intelligence that drives people in many disciplines to discover new things. Creativity enables people to generate, create, or discover new ideas, solutions, and possibilities. Divergent thinking (so-called right-brain thinking) and convergent thinking (left-brain thinking) are used to explore multiple solutions to problems (both together are referred to as Whole Brain Thinking, a model proposed by Ned Hermann in the 1970s).

In *entrepreneurship,* creativity plays an essential role in identifying opportunities, finding ways to offer value through these opportunities, working with scarce resources, and growing a business, for example. Patterson (2018) explains that "creativity allows an entrepreneur to disconnect from the accustomed and move into uncharted territories to discern unique and useful solutions" (para. 11). Creativity is the ability to develop new ideas, look at problems from different perspectives, and innovate. Creativity in entrepreneurship is often used to enhance people's lives or to enrich society.

People often do not associate creativity with *science*. Yet, in science, creativity can have novel/original and useful/adaptive ideas in natural and social sciences. Scientists rely on their imagination to come up with explanations for the unknown, for example.

What is interesting is that true creativity involves Whole Brain Thinking in all the different disciplines. Divergent thinking alone (right-brain thinking) is not genuinely creative, but one needs logical thinking as part of the creative process in any field, from art to science to business. WCIW/D therefore celebrates all forms of creativity.

Creative Collaboration and Multicultural Experiences

Cultures across the world value different types of creativity and the means to display these different types. Cultures differ in their standard of appropriateness and the ways they conceptualize novelty and the processes of creativity. For example, cultures throughout history have used various styles and materials to display their visual arts.

The notion of creativity as an original contribution has roots in Western tradition and individualism. "Creative" had been applied to art, poetry, and drawings. Only in the 20th century was creativity seen as more than art and associated with invention and change. The French saw creativity as invention, discovery, and imagination (Mouchiroud & Lubert, 2006, as cited in Starko, 2018). Other languages used descriptors such as resourceful, intelligent, wise, talented, or artistic. However, there is limited understanding of the indigenous concepts of creativity within Africa. The multicultural use and understanding might be challenging to explain, but the contributions of multicultural experiences should be valued more to make the world a better place for all. In other words, we should not get stuck in the technical debates of the meaning of creativity from sociocultural or multicultural perspectives, but rather focus on the value and contribution it can make across the world.

Creative individuals exist within cultures and fields made up of other human beings. John-Steiner (2000, as cited in Starko, 2018) believed that the development and functioning of the creative process could be enhanced through collaborative thinking. Sawyer (2007) agreed that collaboration is the secret to unlocking true creativity because it is the combined genius of a group that makes it happen. According to John-Steiner, there are four different types of collaborative patterns that have characterized creative partnerships. These are:

- *Distributive collaboration*, which draws on multiple relationships to enhance creative endeavors, is relatively informal, and sometimes results in partnerships;

- *Complementary collaboration*, which occurs when people collaborate based on complementary expertise through which the partners share experience to sustain their undertakings;
- *Family collaboration*, in which relationships within the creative collaboration are more integral across areas of expertise and may involve collaborations of families or groups of individuals working together; and
- *Integrative collaboration*, which requires a long period of shared activity. (John-Steiner, 2000, as cited in Starko, 2018, p. 92)

Technology is changing the opportunities for creative collaboration, and long-distance collaborations are evolving. There are various websites devoted to supporting international collaborations for schools.

Innovation

Innovation can be described as the result of imagination and creativity. Innovation is practical, can be commercialized, and adds value for customers to be interested in it. Tidd and Bessant (2014) agree, defining innovation as "the process of creating value from ideas" (p. 3). Value can be explained as a product or service others find useful. In a competitive market, innovation may be the differentiator between being a leader or a follower. Innovations are driven either by opportunity or threat (Tidd & Bessant, 2014) and are a "sequence of planned experimentation" (p. 12). Innovation is not a single action but an entire course of interrelated sub-processes. It is not just the conception of a new idea, nor the invention of a new device, nor the development of a new market—the process of innovation entails all these things acting in an integrated fashion (Meyers & Marquis, 1969, cited in Trott, 2008).

Wickham (2006, as cited in Nieuwenhuizen & Nieman, 2018) indicate the various innovation areas as being

- New products and services,
- New production techniques,
- New operating practices,
- New ways of delivering the product and service to the customer,
- New ways of managing relationships with the organization, and
- New ways of informing the customer about the product.

One can see that innovation is a broad concept. Trott (2008) used a simple equation for innovation: *innovation = theoretical conception + technical invention + commercial exploitation* (p. 15). The author described innovation as the "management of all activities involved in the process of idea generation, technological development,

manufacturing and marketing of a new (or improved) product or manufacturing process or equipment" (p. 16).

WORLD CREATIVITY AND INNOVATION AND ITS IMPORTANCE

Founder Marci Segal first had the idea for WCID on May 25, 2001. She set about putting her plan in motion, and April 21 was designated as WCID to emphasize the importance of using new thinking to create a decent life for all on a sustainable planet (WCIW, 2021).

In 2002, the first celebrations occurred. Each one held activities, meetings, workshops, and conversations leveraging creativity and creative action relevant to their context. A Yahoo group was formed, and people from all over the world joined. Over the years, celebrations emerged in other countries, including Belarus, India, Australia, Egypt, Peru, Chile, India, Malaysia, the United Kingdom, Italy, France, El Salvador, Morocco, the United Arab Emirates, Greece, Ecuador, Columbia, and Slovenia (WCIW, 2021).

In 2006 the World Creativity and Innovation Day became a week-long celebration and was renamed World Creativity and Innovation Week. Leonardo da Vinci's birthday, April 15, marks its beginning each year. Da Vinci demonstrated creativity in arts and sciences, and he is seen as one of the most creative people ever to have lived (WCIW, 2021). The week ends on the original date of WCID, namely, April 21.

In 2020, WCIW was rebranded, and by this time, the global community spanned over 56 countries. An advisory board with members from 11 countries led the community. In 2021, WCIW celebrated 20 years of embracing and celebrating all forms of creativity, with a global community spanning over 94 countries and led by an international advisory board with members from 15 countries, advisory board supporting members and creative champions from eight countries, 11 organizing team members, and international board members from 26 countries (WCIW, 2021).

Vision

WCIW's vision is to "inspire and enable people (like you and me) around the world to celebrate creativity in their own way, and share it with others through our worldwide community and brand presence" (WCIW, 2021).

Mission

The mission of WCIW "is to encourage people to use new ideas, make new decisions, and take new steps towards making the world, and your place in it, better through creativity" (WCIW, 2021).

Creativity Manifesto

The following manifesto guides the activities of WCIW:

We celebrate creativity.
And despite what society may tell you,
Or what you may tell yourself,
You are creative.
Ambiguity fuels us.
We are the early adopters of challenging the status quo.
And the gate swingers of uncharted territories.
Our empathy opens our hearts to deeper connections.
Our curiosity opens our minds to greater possibilities.
Our unwillingness to stop at failure opens our futures
To a world of opportunity.
Together, we make our dreams happen.
We are a community of do-ers,
Creators,
Igniters,
Explorers,
And leaders.
We conquered the fears of yesterday,
Create the change of today,
And foster the innovation of tomorrow.
We empower and encourage everyone
To use new ideas
And take new action
Towards making the world,
And our place in it,
Better through creativity. (Black, 2020, wciw, org)

Why is WCIW/D Important?

Celebrations make people aware of the value and importance of creativity and innovation, significantly improving how people live, work, and govern societies and countries. Celebrations inspire more people to join WCIW/D because they increase global collaboration and learning. The vision, mission, and creative manifesto show the critical focus of WCIW/D as a positive source of change, action, and collaboration.

WCIW THEME FOR 2021: EDUCATION

COVID-19 came unexpectedly and forced educators to rethink the way they taught and the way students learned. It caused anxiety, as most educators had to change their mindsets and pedagogies to meet the challenges COVID-19 created. It also forced the world to rethink its educational business models and to become more creative and innovative.

Even before COVID-19, there was already high growth and adoption of educational technology, but COVID-19 caused a surge in usage of language apps, virtual tutoring, video conferencing tools, and online learning software (Li & Lanani, 2020). As a result, education has changed dramatically, with the distinctive rise of e-learning, whereby teaching is undertaken remotely and on digital platforms. Instructors around the world noted that e-learning had changed the way they taught for the better. "It enables me to reach out to my students more efficiently and effectively through chat groups, video meetings, voting, and also document sharing, especially during this pandemic," stated one university professor (Li & Lanani, 2020, para. 14). Most educators worldwide believe that a new hybrid model of education will emerge with significant benefits, with many of the opinion that e-learning can work most effectively in conjunction with traditional offline learning (Li & Lanani, 2020).

Others, however, believe that quality of education will decline due to poor user experiences for the educators and students, as well as insufficient bandwidth and access to certain technologies (hardware and software) for low-income and impoverished communities. Students without reliable internet access and technology struggle to participate in digital learning across countries due to the different levels of income (Li & Lanani, 2020:1). Different levels of digital access will only broaden the digital divide and equality gaps (Tam & El-Azar, 2020) and disadvantage such students in every e-learning activity.

Another challenge is that some educators still use traditional teaching and learning methods instead of looking at novel ways of changing their teaching to adapt to the ever-changing world.

WCIW/D specifically focused on education in 2021 to celebrate creative and innovative ways of teaching and learning, as well as to share ideas of activities that were implemented to overcome the challenges experienced (especially in light of the pandemic). Education, creativity, and innovation are shown to be connected and were celebrated as such.

Examples of Novel Digital Teaching

A university in South Africa showcased creativity and innovations in education in 2020/2021. Here are some examples:

- MindMeister was used as a tool for online learning.
- An authentic learning approach was adopted to improve student learning and model this using a module from a postgraduate diploma in HE. Authentic assessments develop skills for the real world of work, and authentic learning enhances both the HE learning experience's quality and relevance.
- A life sciences module was made fun with online learning to keep students engaged and motivated while ensuring independent learning during the lockdown.
- The use of technological tools to provide effective remote teaching and learning to students in the Health Sciences was explored, as well as how current technological applications can be expanded to increase students' engagement and understandings.
- Innovation in student teachers was grown by enabling them to develop simple apps to facilitate learning.
- In natural sciences, the fundamental biochemistry concepts were made fun with game-based learning through platforms such as Kahoot! (https://kahoot.com/).
- Students had to simulate an X-ray tube from recyclable material.
- Helpme.com was used to provide student counseling during the lockdown.
- Simulation-based learning and gamification were used in online classes to provide students with an engaging and authentic learning experience. Students were allowed to put learned theory into practice, running an online business in a simulated environment.
- Students were transported from the classroom to the newsroom by providing a simulated newsroom and equipping students with critical TV journalism skills. With minimal resources, excellence was achieved through learning by doing, and students exited the module having developed the journalistic traits needed to become successful TV professionals.

- Coaching was used as a teaching method – students were taken on an inward journey to help them reflect on life purpose and personal value-add to help them develop entrepreneurial leadership skills.
- Tourism and hospitality programmes used alternative work-integrated learning practices during the pandemic.
- Law students need structure and context to help them learn in working through traditionally dense and voluminous texts. Product-generated knowledge maps in online learning platforms were used in private law courses. Concept chains provided the "conceptual spine" for students.

Other tools that can be used to increase creativity and innovation in education have been identified by Starko (2018):

- Glogster (www.glogster.com) allows students to create multiple posters online, including text, video, and images that can be used in many flexible ways.
- Padlet (www.padlet.com) allows individuals and groups to create online bulletin boards.
- Prezi is an alternative presentation option for students who like to think holistically.
- GameSalad (www.gamesalad.com) allows aspiring designers to create games without having to write code.
- Audacity (www.audacity.sourceforge.net) is an open-source platform for recording and editing sounds, and students can use it to create podcasts, put together multiple presentations or record original music. It makes any 'book report' interesting and shows creative expression.
- Gimkit is an interactive quiz program offering virtual prizes so that students can create their own games, or an instructor can create games to deliver interactive learning experiences. When one creates a Gimkit, a quiz shows up on students' phones. If students answer the question correctly, they receive virtual currency.
- Edpuzzle is a way to turn any video into a quiz or formative assessment tool. One can check whether students are watching videos, how many times they've watched each section, and if they understand the content. This is accomplished in Edpuzzle by placing interactive content into pre-existing videos.
- Mindmeister is a mindmapping tool with which one can collect a lot of information, organize it, and share it. This tool is perfect for project-based learning because it helps students visualize and organize their thoughts and research findings.

- Mural is a digital whiteboard that also has mindmapping capabilities. Students brainstorm using a convergent–divergent process by which they think of potential solutions to the problem they are attempting to solve. Then they are guided through a series of prompts, for instance, asking them to come up with solutions if they had an infinite amount of money, or if they could implement illegal solutions, or if they had no money.
- Pear Deck helps instructors use live slide presentation tools with Google Slides and PowerPoint to create interactive surveys and game-like questions. This approach creates an engaging experience for the students, and the instructor can see an individual student's participation.
- Nearpod is similar to Pear Deck in that it helps with the creation of presentations and slides that integrate different components to increase online student engagement. Nearpod has some discussion functionality, quiz functionality, and bellringers, which are small interactive exercises.
- Toontastic can be used to create and animate original cartoons.
- Skitch allows students to take a picture, write on it, decorate it, and use emojis. It is another way to use mixed media to show understanding and add knowledge.
- The Green Screen app allows students to create "green screen" backgrounds for their video presentations. This enhances creativity to find a suitable background.
- Rubrics can be developed using Rubistar (www.rubistar.4teachers.org). This tool has customized rubrics, or one can create rubrics from scratch.

Education needs to use creativity and innovation to increase engagement and teach students how to be creative and innovative. The following section will focus on how different countries celebrated "Education" during the 2021 WCIW/D.

HOW DIFFERENT COUNTRIES CELEBRATED WCIW/D IN 2021

The theme for the 2021 WCIW celebration was education. The various countries participated to show why education was necessary for the development of creativity and innovation and how creativity and education could be used to improve education. The theme was fitting after the 2020 lockdowns across the world due to COVID-19.

Regional Activities to Celebrate Education, Creativity, and Innovation in 2021

Figure 3. Regional count 2021
Source: Own compilation, based on Avery Robinson (2021), World Creativity and Innovation Week/ Day 2021 Celebration Breakdown feedback

Africa

The largest contributors were South Africa (14 celebrations, 10 more than in 2020), Tunisia (eight celebrations in 2020 and 2021), and Nigeria (seven celebrations, one more than in 2020). Here are some of the activities in 2021 showcased on the WCIW website. Table 1 shows 10 examples from the African continent.

Asia

The largest contributors were China (nine celebrations in 2020 and 2021), Jordan (nine celebrations, one less than in 2020), and Pakistan (nine celebrations in 2020 and 2021). In Table 2 are some of the Asian activities in 2021 showcased on the WCIW website.

Table 1. WCIW/D celebrations: Africa

Country	Celebrations Title Activity	Type of activity
1. Africa	1.1 Alchemy Inspiration	Neuroscience of Creativity	Imbizo
	1.2 Cultivating Creative and Innovative Trailblazers (University)	Webinars
	1.3 How to Boost Your Creativity for Success in Business and Life	Masterclass
	1.4. Innovation in Education (School)	Different grades explore technology
	1.5 The Creative Classroom from Mindset to Skillset: Innovating Students for the Future (University)	Webinar
	1.6 Brute Force Disruptions or Building Up Another Bubble? Government-Driven Innovation in Education (University)	Webinar
	1.7 Use Your Lens and Demonstrate One of the Sustainable Development Goals	Photo Competition
	1.8 Creativity in Captivity: Interview with Al Qaeda hostage, Stephen McGown	Interview
	1.9 Creativity for Sustainability	Workshop
	1.10 Inspired by Creativity	Children make sustainable items

Source: WCIW (2021)

Table 2. WCIW/D celebrations: Asia

Country	Celebrations Title Activity	Type of activity
2. Asia	2.1. Creative Design Exhibition (School)	Student exhibition
	2.2 Creativity Day at DAIS! (School)	Talks, presentations, workshops
	2.3 Farm Innovation Fair (making homes for insects) (School)	Farm Innovation Fair is a 2-day event
	2.4 Hangzhou Greentown Yuhua Primary School Science and Art Festival (School)	Popularize science, technology and art education activities
	2.5 Invent Future Invention Convention (IFIC 2021)	First student invention convention in China
	2.6 Whittle Inventor's Fair (School)	Children build and test inventions
	2.7 #creativityJAM	Mode mashup Google workspace for education and Adobe Education Tools
	2.8 Empowering women entrepreneurship in STEM fields	Webinar
	2.9 Entrepreneurial Opportunities	Webinar
	2.10 Innovation in digital marketing and its impact on entrepreneurship	Webinar

Source: WCIW (2021)

Europe

The three largest contributors were France (20 celebrations in 2021, one fewer than in 2020), the United Kingdom (19 celebrations in 2021, two fewer than in 2020), and Italy (eight celebrations in 2021, two fewer than in 2020). Table 3 lists 10 European activities in 2021 showcased on the WCIW website.

Table 3. WCIW/D celebrations: Europe

Country	Celebrations Title Activity	Type of activity
3. Europe	3.1 Creativity Challenge	Challenge – 100 answers to a question
	3.2 Find Your Purpose. Impact The World!	Webinar
	3.3 Lummelen is Slim and Creativity in het Curriculum (School)	Keynote speakers
	3.4 Presentation of book *50 Fresh Ideas for the Netherlands* by de Bedenktank	10 online brainstorm sessions and generation of over 1,500 ideas
	3.5 Eighth Symposium on Creative Education	Symposium
	3.6 Creativity Club Launch of the German-Speaking Community for "Creative Thinking & Constructive Communication"	Awareness campaign
	3.7 Youth Start WCIW/D 2021 Celebration	Conference and teacher in-service training
	3.8 Session d'ouverture	Session presentation
	3.9 Meet the Zebras	Webinars
	3.10 UNI-fying Innovation for Luxembourg	Entrepreneurship pitches

Source: WCIW (2021)

North America

There were two large contributors: The United States had 42 celebrations in 2021, a drop from 64 in 2020. Canada held five celebrations, a drop from 10 in 2020. Some of the North American activities in 2021 showcased on the WCIW website are shown in Table 4.

Oceania

The two largest contributors were Australia with 13 celebrations, two fewer than in 2020, and New Zealand with 11 celebrations in 2020 and 2021. Table 5 shows some of the 2021 activities in Oceania that were showcased on the WCIW website.

Table 4. WCIW/D celebrations: North America

Country	Celebrations Title Activity	Type of activity
4. North America	4.1 7-Day Creativity Challenge	Daily micro-lessons
	4.2 Brain Flexibility: Neuroplasticity and Creativity	Workshop
	4.3 Creativity in Action	Four Key Design Thinking Superpowers	Webinar
	4.4 CreateTUBEity 7 Day Creative Thinking Challenges	YouTube channel
	4.5 Creative Stories for Project Giving Hope (School)	Story writing & sharing
	4.6 Hands-on Thinking with LEGO® SERIOUS PLAY®	Experiential session hands-on session
	4.7 Imagining the Future	Forum
	4.8 Launch of Fueling Creativity Podcast: Interview with Dr. Jim Friedman about World Creativity and Innovation Week	Podcast
	4.9 Leading the Creative Problem-Solving Process	Online course
	4.10 Let's Make the World More Creative!	eSTEM Club

Source: WCIW (2021)

Table 5. WCIW/D celebrations: Oceania

Country	Celebrations Title Activity	Type of activity
5. Oceania	5.1 #WorldInnovationDay	Hackathon
	5.2 Business Opportunity Breakthrough: Revealing Secrets to Creating Winning Opportunities	Workshop
	5.3 Core Strengths of Creative Champions	Webinar
	5.4 Creative Enlightenment	Publication
	5.5 Identify the Key Creativity Killers!	Digital Gameboard Simulation
	5.6 Let's Get Creative	Classroom activity
	5.7 Witty Wisdom	Workshop
	5.8 11 Dimensions of Creativity	Animation & Symposium
	5.9 Business Opportunity Breakthrough: Revealing Secrets to Creating Winning Opportunities.	Workshop
	5.10 Celebrating Creativity at Capital E	Talk

Source: WCIW (2021)

South America

There was one large contributor, Argentina, with 12 celebrations in 2021 (down one from 2020). Some of the 2021 activities showcased on the WCIW website are listed in Table 6.

Table 6. WCIW/D celebrations: South America

Country	Celebrations Title Activity	Type of activity
6. South America	6.1 Imagine if....Finding your Creative Self Could Change Your Life	Workshop
	6.2 Celebration Innovation, Creativity, Intellectual properties, and Creative Economy!	Discussion
	6.3 Suit Up	Recollect clothes drive
	6.4 The Creativity Hub for Advanced Teachers	Workshop
	6.5 Libres de contaminacion y pobreza	Image design
	6.6 Expandiendo mentes y fronteras	Game development
	6.7 Educación. Educando el futuro: En busca del desarrollo sostenible	Article writing
	6.8 Botella ecológica	Biobottle making
	6.9 Aprendiendo a Reciclar	Recycling education
	6.10 Proceso de compostaje	Activity

Source: WCIW (2021)

Notable types of celebrations were across the world in 2021, as shown in Tables 1–6, included:

- Art education
- Book clubs
- Brain dip experience
- Building and testing new inventions
- Comedy hour
- Computer courses
- Conferences/ Imbizo/ Online Symposium
- Creative Academic Magazines
- Creative Doodle Book program
- Daily Creativity Challenges
- Design Thinking courses
- Diagnostic game (Tirian) (digital gameboard)
- Exhibitions
- Facebook Forums
- Game development
- Global Big Sing
- Hackathons
- Inventor's Fair
- Lego Serious Play

- Virtual networking
- Photo competitions
- Project-based learning activities
- Recycle education
- Science and Art Festivals
- Science polarization activities
- Speed mentoring
- Talks/ Discussions/ Presentations
- Thoughtstorm
- Virtual Happy Hour (forum speakers)
- Webinars
- Workshops

As has been shown, there are any number of ways to celebrate WCIW/D. Countries can learn from others and include some of these ideas in their future celebrations. Collaboration between countries is also encouraged to enhance creativity and innovation.

RECOMMENDATIONS

The world needs creativity and innovation to achieve the 2030 SDGs laid down by the UN. More activities such as the WorldLargestLesson (https://worldslargestlesson.globalgoals.org) should be expanded across all countries to include children to become changemakers through initiatives such as Generation Earthshot (https://generation.earthshotprize.org), which encourages them to generate ideas and innovations to repair our planet. Children should be taught to use their imaginations, be more creative, and turn ideas into products or services to make the world a better place for all. A similar project should be created for students in HE.

More campaigns should be launched to make more people aware of the importance of creativity and innovation in their everyday lives. More schools, organizations, governments, communities, and academics should participate in the WCIW/D held annually. Much as a COVID-19 global awareness campaign was spread in order to save lives and ensure our continued survival, so too could such a campaign be duplicated, this time focusing on creativity, innovation, and contributions to the 2030 SDGs to ensure a better world and a sustainable planet for us all. This will include using various marketing strategies across the globe, which organizations and governments should include in their budgets. The WCIW/D Head Office can take the lead in shaping the messages that should be shared through various media platforms.

WCIW/D needs to be advertised more broadly in traditional media (TV, radio, print), social media, and at large events. From what was determined in this chapter, more awareness activities are necessary to get more countries to participate from April 15 to 21 anually.

Entrepreneurs could start business ventures based on creativity, innovation, and the 2030 SDGs, and tertiary education institutions should offer programs and qualifications in creativity and innovation to prepare students to play an active role in their communities.

More research should be done to identify ways to increase participation in, enhance awareness of, and to measure success rates of annual celebrations and activities throughout the year.

Volunteers are an essential aspect of WCIW/D. Most people with the necessary expertise prefer not to get involved, however, as there is no remuneration. Effective communication campaigns should be developed to draw experts from various countries to participate in and collaborate on WCIW/D for its myriad other benefits beyond personal remuneration.

FUTURE RESEARCH DIRECTIONS

The creativity and innovation endeavors of a country should be linked to its culture to determine what makes its celebrations unique and how communities can be inspired to be more creative and innovative. Countries may be compared to determine why there is greater uptake in hosting celebrations by some more than others and the reasons for increased or decreased participation from year to year.

The celebrations should be evaluated for how effectively they have increased awareness of the value and need for creativity and innovation in all counties. It is important to measure the success of celebrations to determine the impact annually

International advisory board, its supporting members and creative champions, organizing team members, and international ambassadors should be interviewed to identify the challenges they faced and lessons learned, best practices, and recommendations for how to celebrate WCIW/D annually.

CONCLUSION

The chapter explained what WCIW and WCID entail. The history, vision, and mission were discussed to provide a background of its founding (by whom, why, and when), the annual activities and reasons for their undertaking. The importance of creativity and innovation was expressed, as it forms the foundation for the WCIW/D.

The first research objective (to explain why creativity, innovation, and education are important) was achieved, as these three concepts were discussed, and their links to WCIW/D identified. Education as the theme for 2021 was explored and led to the second research objective. The chapter explored how WCIW/D was celebrated across the six inhabited continents, focusing on the theme and highlighting the countries that were most prolific in their celebrating WCIW/D. Various educational activities, types, examples of creativity and innovation in education, and tools that can enhance creativity and innovation in the classroom were identified. The chapter concluded with recommendations to create awareness, celebrate with impact, collaborate with other countries, and support the WCIW/D's mission and other countries, thus fulfilling the third research objective.

Creativity helps solve wicked and super wicked problems, and innovation creates value and competitive advantage from a practical perspective. In order to ensure a better future for all—the aim of the SDGs, which have been classified as wicked problems—the world needs creativity and innovation. These competencies should therefore be celebrated and developed if we are to stand any chance of attaining these sustainability goals.

REFERENCES

Albrectsen, A. (2017, January 31). *Why collaboration will be key to achieving the Sustainable Development Goals*. World Economic Forum. https://www.weforum.org/agenda/2017/01/realising-the-potential-of-cross-sector-partnerships/

Black, A. (2020, February 10). *WCIW | #IAmCreative* [Video]. YouTube. https://www.youtube.com/watch?v=xMvP5IGRi74

Bulcke, P. (2017, January 10). *To achieve the SDGs, the world must work together.* World Economic Forum. https://www.weforum.org/agenda/2017/01/sustainable-development-goals-partnerships

Christensen, T. (2015, May 18). The differences between imagination, creativity, and innovation. *Creative Something*. https://creativesomething.net/post/119280813066/the-differences-between-imagination-creativity

Creative Oklahoma. (2021). *Dr. E. Paul Torrance.* https://creativeoklahoma.org/dr-e-paul-torrance/

De Jong, M., Marston, N., & Roth, E. (2015, April 1). The eight essentials of innovation. *McKinsey Quarterly*. https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/the-eight-essentials-of-innovation

Dutta, S., Lanvin, B., & Wunsch-Vincent, S. (Eds.). (2020). *Global Innovation Index 2020: Who Will Finance Innovation?* Cornell University, INSEAD, & World Intellectual Property Organization. https://www.wipo.int/edocs/pubdocs/en/wipo_pub_gii_2020.pdf

Felber, J. (2020, August 18). *The Importance Of Creativity In Business.* Forbes Small Business. https://www.forbes.com/sites/forbesbusinesscouncil/2020/08/18/the-importance-of-creativity-in-business/?sh=48728393e7d7

Florida, R. (2004, October). America's Looming Creativity Crisis. *Harvard Business Review.* https://hbr.org/2004/10/americas-looming-creativity-crisis

Frérot, A. (2016, January 23). *The future of business will be defined by collaboration.* World Economic Forum. https://www.weforum.org/agenda/2016/01/the-future-of-business-will-be-defined-by-collaboration

Gharib, M. (2020, January 11). *Feeling Artsy? Here's How Making Art Helps Your Brain.* NPR. https://www.npr.org/sections/health-shots/2020/01/11/795010044/feeling-artsy-heres-how-making-art-helps-your-brain

GoodTherapy. (2015, August 10). *Imagination.* https://www.goodtherapy.org/blog/psychpedia/imagination

Hopkins, B. (Host). (2018). *Kyung Hee Kim on 'The Creativity Crisis* [Audio podcast]. https://www.robhopkins.net/2018/09/20/kyung-hee-kim-on-the-creativity-crisis/

Kim, K. H. (2017). *The Creativity Crisis: It's Getting Worse.* Idea to Value. https://www.ideatovalue.com/crea/khkim/2017/04/creativity-crisis-getting-worse/

Li, C., & Lalani, F. (2020). *The COVID-19 pandemic has changed education forever. This is how.* World Economic Forum. https://www.weforum.org/agenda/2020/04/coronavirus-education-global-covid19-online-digital-learning/

Nieuwenhuizen, C., & Nieman, G. (2018). *Entrepreneurship: A South African perspective* (4th ed.). Van Schaik Publishers.

Patterson, L. (2018, June 13). *The role of creativity in entrepreneurship*. AlphaGamma. https://www.alphagamma.eu/entrepreneurship/role-creativity-in-entrepreneurship/

Plunker, J. A., Beghetto, R. A., & Dow, G. T. (2010). Why isn't creativity more important to educational psychologists? Potentials, pitfalls, and future directions in creativity research. *Educational Psychologist*, *39*(2), 83–96. doi:10.120715326985ep3902_1

Ruysenaar, S. (2021). Thinking Critically about the Fourth Industrial Revolution as a problem. In Z. Fields (Ed.), *Using global collective intelligence and creativity to solve wicked problems* (pp. 1–26). IGI Global. doi:10.4018/978-1-7998-2385-8.ch001

Sawyer, K. (2009). The Collaborative Nature of Innovation. *Washington University Journal of Law and Policy*, *30*(1), 293–324. https://core.ac.uk/download/pdf/233186699.pdf

Starko, A. J. (2018). *Creativity in the classroom: Schools of curious delight* (6th ed.). Routledge.

Tam, G., & El-Azar, D. (2020). *3 ways the coronavirus pandemic could reshape education*. World Economic Forum. https://www.weforum.org/agenda/2020/03/3-ways-coronavirus-is-reshaping-education-and-what-changes-might-be-here-to-stay

TeachThought. (n.d.). *8 Types Of Imagination.* https://www.teachthought.com/learning/8-types-of-imagination/

Thomas, A., & Thorne, G. (2017). *How to increase higher level thinking*. Center for Literacy & Learning. https://www.cdl.org/how-to-increase-high-order-thinking/

Tidd, J., & Bessant, J. (2014). *Strategic Innovation Management*. Wiley.

Trott, P. (2008). *Innovation management and new product development* (4th ed.). Prentice Hall.

Walls, H. L. (2018). Wicked problems and a 'wicked' solution. *Globalization and Health*, *14*(1), 34. Advance online publication. doi:10.118612992-018-0353-x PMID:29653547

Wingard, J. (2020). *Why Companies Need Creative Leaders In The Future Of Work.* Forbes. https://www.forbes.com/sites/jasonwingard/2020/05/29/why-companies-need-creative-leaders-in-the-future-of-work/?sh=7d1736d3482a

World Creativity and Innovation Week. (2021). *Home and about us*. Retrieved Feb 6, 2021, www.wciw.org

KEY TERMS AND DEFINITIONS

Creativity: Creativity is about solving problems and satisfying needs by developing novel and useful solutions.

Innovation: The implementation and commercialization of new and problem-solving ideas, practices, or products through which change is brought about.

World Creativity and Innovation Day (WCID): Declared by the United Nations as a day (the 21st of April annually) of observance to celebrate creativity worldwide.

World Creativity and Innovation Week (WCIW): A week (15-21 April annually) to celebrate creativity and innovation worldwide.

APPENDIX

Examples of Flyers used during the 2021 Celebrations

Figure 4. Flyers used in Africa

Figure 5. Flyers used in the Netherlands and Canada

Figure 6. Flyers used in South African universities

Figure 7. Flyers used in Canada

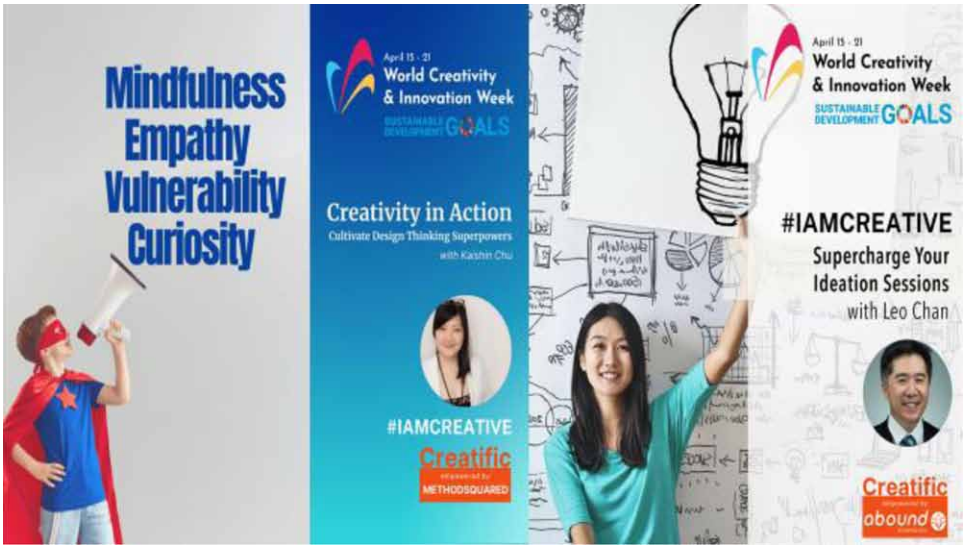


Figure 8. Flyer used in New Zealand

Figure 9. Flyers used in Canada and the United States

Chapter 2
Creative Leadership:
A Multidisciplinary Approach to Creativity

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ABSTRACT

The field of philosophy, where the deepest existence debates are held, sheds light on other scientific fields while accommodating different perspectives on creativity. Understanding leadership from a creative thinking perspective is one of the ways of understanding, predicting, directing, and guiding human behaviors, both from an artistic and scientific point of view. Goals such as innovation, creativity, and sustainability make the awareness process important due to the reflections of rapidly changing technology on business and social life. For this reason, the change of thought process and the technological developments that guide this change are emphasized, and then the creative leadership term is discussed with a multidisciplinary perspective in this chapter. In this way, it is aimed to understand the new dynamics of the changing competitive environment more easily.

INTRODUCTION

When attention is paid to the branches of science that try to understand people, it is seen that deep examinations are made primarily for the individual and the concepts that affect the psychological development of the individual. Psychology's attempt to understand individuals, sociology's interpretation of society, and philosophy of

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existence progress with this perspective. The fact that there are different and interacting factors beyond the observable factors prevents the individual from being evaluated by examining only anatomically. Since an individual's attitude towards an object or phenomenon cannot always be explained by cause and effect relationships, behaviors are not considered simply as an action-reaction process. Even if all conditions are the same, the individual can react differently to the same situation, and therefore subconscious complexity also comes into play, beyond superconscious processes.

Since this complex structure of the mind and decision-making process diversifies the way individuals perceive, interpret, and evaluate the world, their perspective towards art and reality is also shaped by the influence of different concepts. For this reason, it is very difficult to understand the aesthetic judgments of the individual and it becomes almost impossible to classify subjective value judgments. Clues about the evolution of people's thinking can be obtained by looking at the stages of business and social life until today's modern technologies. Although drawing sharp lines is difficult, there seems to be some revolution in the way of thinking. Technological developments, which progressed both radically and gradually, have shaped lifestyles and influenced the values of society while showing their effects in all areas of life. Since this interaction between the individual, technology, and environment is constantly evolving in a reciprocal cycle, constantly changing technology has accelerated the evolution of individual life in different directions.

Inferences based on intuition or experience may not always be very accurate, but knowing the history of an event can make predictions easier. For this reason, it can be understood what kind of thought patterns humanity has had since the beginning of social life by looking at philosophy, which is one of the oldest science branches trying to understand humans and the universe. The interpretation of reality perceived with the help of sense organs takes a different name if it needs a mental process of a human, while it turns into a different concept if it continues its existence without the need for comprehension. Philosophy, which tries to understand existence in every field from art to science, from individual to social life, has become much more complex with the critical perspective following the modern approach. However, the critical approach made it obligatory for individuals who questioned the concepts to be handled from different approaches instead of hiding behind single and universal acceptances.

To understand the evolution of creative thinking, it is useful to look at the evolution of thought in different fields such as science, art, and technology. Only in this way can a basis for the concept of creativity come from different disciplines. This basis, which allows looking from a broad perspective, clearly shows the effect of the environment on human life (Higgins & Reeves, 2006). Although different related groups make up the external environment in terms of both individuals and institutions, technology takes the biggest share of them. Strategic management,

which tries to understand the impact of technology on the business and prepare businesses for this rapid change, provides a wide range of literature on this subject (Fauzi et al., 2021). Because adapting to change is seen as one of the most basic requirements of sustainability. Otherwise, both the individual and the business can't survive as a social and open system. Adaptation theories share the views of many different schools of thought in this area, moving from an economic perspective to a behavioral perspective or post-modern perspective.

Looking at the most advanced point of the change, it is seen that new plans have been made in the field of technology and the studies have started to come to a different point from the previous industrial revolutions. This process, which is described as Industry 4.0, offers a technological infrastructure to change the world considerably in the future (Jamwal et al., 2021). The necessity of radical changes to reach this planned future shows that human life will change considerably and working methods will move away from the old state. These technologies, which enable the generations to communicate with each other via the internet and act independently from the individual, are expected to have some social outputs, although they are intended to be implemented with the concern of effective and efficient use of resources (Koropets & Tukhtarova, 2021). Since it is necessary to see gray areas as well, change cannot always be considered as very good or bad. However, only the profitability target and the targets related to the process should be evaluated carefully so that social life does not suffer heavy damage.

All these changes and the rapid advancement of technology affect the scope of the concept of creativity. Who is considered to be or not creative by the individual will be determined at the subconscious level by many concepts such as environment, socio-cultural, and business norms. Therefore, in this chapter of the book where creativity is discussed in terms of different disciplines, it is emphasized that it is very necessary to understand the change that creative thinking has experienced. The chapter is important to learn about the concept of creative leadership from different perspectives. From this point of view, firstly the concept of creativity, then technological change, and finally creative leadership is mentioned. Understanding the change and the way of thinking facilitates a more detailed interpretation of the creativity and creative leadership shaped based on this concept. Subsequently, the creative leadership models are presented provide information about the appropriate conditions for the development of this type of leadership, and emphasized the importance of teamwork. In this respect, it is expected that the book and this chapter will contribute to both professional practitioners and individuals who teach in this field.

EVOLUTION OF CREATIVE THOUGHT

When leadership is handled in a multidisciplinary way, it is necessary to talk about art because creativity or creative thinking includes intricacy and subjective mental processes. Because the way of thinking, which is composed of a complex structure by its nature, cannot be explained solely from an analytical point of view. Therefore, dealing with the subject both scientifically and artistically will provide a more comprehensive perspective to explain the complexity and reciprocity interactions within social systems.

A closer examination of recent world history shows that the stages of social life have parallel effects in the fields of art and science. Because the main issue is the way individuals view life and interpret it they perceive. For this reason, developments in human history have affected every aspect of society and directed it to different levels. Since the technical dimensions of these developments will be discussed in the following titles, the methods of shaping the way of thinking will be mentioned here. Although scientists or artists are not aware that they have started a new approach in the current period, the subsequent classifications bring together some views and present a deep perception.

Philosophy, which includes views from ancient times, makes it easier to understand the concepts that form the basis of creativity from different points of view. While doing this, this branch of science, which makes use of many different subjects, firstly ensures that thoughts are based on a foundation. The concepts of epistemology and ontology are among the sub-fields of philosophy that show the basic point of view to problems or phenomena. Additionally, the philosophy of art helps to understand aesthetics while axiology helps to understand values (Fingerhut et al., 2021). These sub-branches can be further increased, but it will be sufficient to mention the concepts that are thought to affect the perception of the creativity title attributed to the leader.

First of all, it is necessary to understand how an existing phenomenon is perceived and interpreted. When this process is examined carefully, it can be seen that a complex filter is used that individual differences are quite intense. This mental interpretation process is shaped by the perception of reality. At this point, understanding the concepts of epistemology and ontology makes it easier to interpret the concept of aesthetics. Epistemology shortly investigates the structure and validity of the information. This investigation includes many scopes such as the source, boundaries, accuracy, measurement, and reality of the information. The curiosity about whether knowledge emerges based on senses or some particular reasons, and how it comes into being, further deepens this area. While rationalists argue that knowledge is based on reason, empiricists claim that knowledge is based on experience. There are also approaches claiming that the information is intuitive or sensory (Tong, 2021).

These different perspectives require understanding what creative leadership means in terms of different disciplines.

Ontology answers the question of whether it would be enough to eliminate the senses that sometimes cause biased perceptions to reach the objective truth. The concept, which investigates general existence instead of limited and relative reality perceived by the senses, argues that reality exists independent of perception. In other words, even though there is no human mind, the mentioned phenomenon exists and is real. The fact that the individual has not yet perceived or grasped this phenomenon does not change the reality. If this perspective is adapted to leadership, the question arises whether the leader exists or should be perceived by the followers or team members. Attribution theory draws attention to the necessity of the perception process by emphasizing the followers while explaining leadership. Understanding what types of individuals correspond to the leaders by their followers or team members will also make it easier to understand the level of creativity (Chen et al., 2021). Theoretically, knowing whether these attributions to these people, who are named such as creative, transformational, or visionary leaders, were made by members or by researchers, may also reveal the reasons why the leader is seen as creative.

The way scientific knowledge advances is sometimes from theory to practice, while in areas such as leadership, the reverse is from practice to theory. Leadership research, which started with the investigation of the common characteristics of successful leaders, has moved from trait theories to behavioral theories and then to contingency since there is no magic leadership formula. This mutual interaction between theorists and professional practitioners or the business world has always kept the topic of leadership in and popular. Although all the qualities that make the individual unique in the perception process enable quite different types of leadership to emerge, the requirements of the age have also accelerated this change. The concept of leadership, which cannot be limited to analytical research, is also a process related to how an individual perceives art, aesthetics, or creativity.

Motivating, volunteering, and persuading people to make efforts towards a common goal is a process managed by hidden knowledge in which psychological contracts exist. If there was a structure made in writing and mandatory and in which communication channels were clearly stated, it would be necessary to talk about management, not leadership. The manager, who aims to maintain the current situation, is not expected to lead the masses that create a new vision. It is deemed sufficient to reach the planned targets by carrying out the daily routine works smoothly. Despite this, it is emphasized that the management has both scientific and artistic aspects. Because dealing with individuals ultimately requires understanding and predicting them. Some projects try to teach leadership by bringing together practitioners, schools, and organizations interested in these ideas. Because the association of

different institutions and organizations or different disciplines is seen as important for Leadership for Learning (LfL) as in every field (Coenen et al., 2021).

The subject of aesthetics explains the existence of the subject-object relationship. While explaining this relationship, the term states that there is a judgmental interest. In other words, it is a concept based on the individual consisting of aesthetic judgments. This means that the individual's perception of being beautiful, ugly, nice, or bad is subjective and is a set of judgments based on the attitude towards the object in question. Therefore, a situation that a team member finds creative, motivating, and inspiring may differ from that of another. So, differences in individual judgment force the leader to be human-oriented (Sadana et al., 2021). If a leader who succeeds in finding the optimum balance between work and worker can guide individuals to take creative steps, then creative leadership can be mentioned.

INDUSTRY 4.0 TECHNOLOGIES

The elements of the near and far external environment, which are as effective as the internal variables considered to carry out the basic activities of the business, make technology one of the important concepts. Questions such as how many goods or services will be produced, how will this production be carried out with which technologies, what will be the role of labor in this production clarify the role of technology in the basic production process. The concept of technology, which continues to exist during the realization of support activities as well as main activities, is highly affected by the global acceleration of the digitalization trend. For this reason, the way of reaching the consumer as well as the way the enterprise conducts its activities can be diversified depending on the opportunities provided by technological progress.

Understanding the direct and indirect impact of technology, which also has negative aspects due to the human devotion or longing to nature, is one of the requirements of considering the employee in the workplace. In this part of the book, which draws attention to the creative side of innovation, creativity, education, and leadership focused on sustainability, understanding the direction of technology will make it easier to interpret business life. When the modern world is thought within the scope of the invention of a tool without descending to the invention of the wheel or fire, the invention of steam power and later mechanical knitting machines is mentioned as the pioneer of industrialization. These pioneering steps of industrialization taken in the 1700s enabled the production line to be adapted to enterprises with the invention of electricity and then started automation processes (Jamwal et al., 2021). Industry 4.0 technologies, the most current state of this progress, targets a world where machines can communicate with each other over the internet.

Industry 4.0 is known as the fourth industrial revolution, which is seen as having the potential to meet customized needs during crises. This revolution, which is currently under development, involves the gathering of information technology and all vital mechanisms. As in every development process, there are opportunity costs in the field of technology. This rapid advancement of technology saves lives by offering new solutions to patients suffering from organ failure, on the other hand, it can lead to unemployment in different areas (Koropets & Tukhtarova, 2021). However, while the internet offers new business areas, it can reduce the individual's dependence on land and nature. In other words, agriculture with soilless water provides a solution to the increasing urbanization of natural areas, while it also includes interventions in people's natural diets. In short, the advantages and disadvantages discussions are still up-to-date in industry 4.0, as in other areas of technology.

Industry 4.0 is a set of systems consisting of three stages; the internet of things, internet services, and cyber-physical systems. In this system, large-scale machine-to-machine communication (M2M) and the internet of things (IoT) are integrated for increased automation. This means that the system can improve communication and self-monitoring, and includes the production of smart machines that can analyze and diagnose issues without the need for human intervention. With Industry 4.0, which is expected to bring the new world order, it is aimed that all production and living areas have smart hardware and systems work integrated. The realization of these with a 20-year time goal means living with digital fingerprints, that is, almost every breathing of an individual can be analyzed by advertising companies (Fatorachian & Kazemi, 2021). Even today it might be a little daunting to imagine how daring companies embarking on massive adware attacks would be in an all-digital world. The purpose of machine-to-machine communication can also create a tendency to fear change by reminding them of science fiction movies. The answer to the question of why this system, which is expected to have disadvantages such as unemployment, reduction of free will, and seeing the individual only as an advertising target, is one of the most fundamental goals of the economy. More production with fewer resources, and less cost without wastage, that is, efficient use of resources is one of the primary priorities.

Today, when natural resources are scarce, it is clear that even water, which was once thought to be infinite, is now among the scarce resources and places heavy responsibilities on the world's self-renewing ecosystem. Security and speed are other issues that the system cares about. It is also seen as robotization, which is called dark or lightless factories because it involves unmanned production. With the opening of 3D printers for home use, it is expected that company dependency in some areas will decrease. Cybersystems mean sensors that can manage themselves, while the internet of things and services refers to robots that can make quick decisions and communicate with each other independently without any interference. The evolution

of technological development from water and steam power to electricity assembly lines and then to information technologies continues to develop with the automation and software industries. The basic principles of Industry 4.0, whose studies are still ongoing, give clues about the direction of business life. These basic principles can be summarized as follows (Oztemel & Gursev, 2020):

- Interoperability: This principle refers to the communication between humans and robots. While people can control the machines remotely, the machines inform the system administrator when they encounter a problem that they cannot solve.
- Virtualization: The connection between humans and machines is not physical but online.
- Autonomous management: Machines or robots in smart factories can take a production decision on their own, based on data analysis in ordinary situations.
- Real-time capability: Production is based on data. Therefore, when data change, production is directly intervened and production is reshaped. In this system, since all data is collected, on one hand, there are no complex information stacks. Therefore, unnecessary and untimely production is not made. The malfunction that occurs in the system is immediately noticed.
- Service orientation: It means that robots reach everyone instantly.
- Modularity: This concept, also known as flexibility, means that changes in the new smart factory system are easy. When there is a change in the production plan, it can be passed to the new production stage and technique with the help of a simple program. Therefore, existing factories or machines need to be changed radically.

It is seen that the basic principles listed are generally flexibility, speed, and mobility-centered. The interaction of machines that can make their own decisions independently of the individual also accelerates the decision-making process. It is realized that robotic systems that require radical changes in existing production systems will require large infrastructure investment.

CREATIVE LEADERSHIP

Defining, and recognizing the concept of creativity, and then adapting it to the work environment is quite difficult due to the complex and interactive nature of human beings. The concept, which is defined in the dictionary as the ability to exist or the hypothetical predisposition that drives the individual to create something, requires

some conditions for its emergence. A suitable work environment or sometimes unusual circumstances that are, extraordinary conditions can also create a leader (Bellows, 1959). This aspect of the leader has been highly debated, this person who guides people during a crisis or disaster and tries to control the situation, maybe would not be noticed at all if the conditions were normal. Therefore, concerns such as creativity, adaptation to rapid changes in the environment, and sustainability can create a favorable environment for new leaders in the business world. In addition, factors such as talented employees, effective communication, trust atmosphere, participatory management can also trigger creativity.

Being able to offer unique solutions to complex problems and to gather employees around this solution are among the qualifications of a creative leader. The process that starts with awareness continues with original and innovative thinking. One of the most emphasized topics in creativity education is that it is necessary to gain the ability to look outside the box to see all relevant variables, that is, to deal with them comprehensively, before addressing events or problems (Higgins & Reeves, 2006). Goals such as corporate leadership or high-performance teams with effective communication skills raise interest in training for creative leadership.

Different objectives such as innovation, sustainability, or effective teams make the creative leader important, as they result from the effort to incorporate the confidential information within the individual into the value creation process of the business. Because only if the individuals are willing and there are suitable conditions, they will spend their creative energy as an effort towards the work. So the main thing is not only to be able to solve exceptional problems but to understand team members to go beyond what is available. For this reason, it is necessary to first understand the box, that is, the current situation, and then go out of the box and get away from subjective and see various approaches. At this stage, it is necessary to determine how far to go to distinguish between dreaming and reality. Therefore, the creative leader must first have good personal awareness and then be able to make creative solutions for the situation to reach the vision with effective communication skills. Because not only leaders but also other organizational members must believe in this solution. Therefore, members should be volunteered through motivation, persuasion, or inspiration. Considering all these processes, the following four dimensions can be mentioned that emphasize the focal point of creative leadership (Bellows, 1959; Harper, 2012):

- Change and transformation,
- Coaching and working together,
- Problem-solving and critical thinking,
- Professional and personal development.

Looking at the dimensions, a rapidly changing environment and a structure that values human adaptation to this environment draw attention. Because as technology changes, the perspective towards people has also changed. Because leadership that can produce new results rather than ordinary has become important. Leadership and dealing with confidential information in the minds is a challenging process as it requires both art and science. However, this point of view can be seen as one of the approaches that show that people are valuable in business life.

Creative Leadership Models

When it comes to creativity, there are different opinions on what the basic starting point is and how the concept should be classified. First of all, an answer is sought to the question of whether it is an adaptation to the determined goal or creativity for exploratory. Then focusing and exploratory thinking are emphasized. The second important question is whether the determined creative solution is general or specific to the situation. Because the answer to this question leads to the contemplation of universal creativity. It can also be determined whether creativity is structured or not (Cropley et al., 2011). This final classification is sometimes made with the distinction between structured or systematic creativity.

This diversity in the characterization of creativity also manifests itself in creative leadership. This type of leadership, which is about taking the members of the organization from their level to where the leader wants to be, includes; transformational leadership, emotionally intelligent leadership, visionary leadership, charismatic leadership. The perspective of the creative leader according to the level of creativity can be summarized as follows (Bonney & Sternberg, 2016):

- Accept the current paradigms but find ways to expand the status quo,
- Reject the current paradigms and try to change them,
- Synthesize existing paradigms and create new paradigms.

These three different creative leadership perspectives are generally related to the extent of accepting the current situation and carrying it to the new situation. While improving the current situation is aimed at the lowest level, new and creative activities are adopted at the highest level with radical steps. Which type of creative leadership is more acceptable depends on the interaction of the leader, members, and circumstances. According to the investment theory, the creative leader is considered to be the economists of the world of ideas that buy cheap and sell high. Sternberg and Lubart (1991), emphasize that creative leaders are willing and able to buy low and invest high in the realm of ideas. There are also different approaches to creative leadership. These approaches and models highlight the issues that need to be

considered to increase creativity. Katz-Buonincontro (2008) mentions that using art to promote creativity in leaders from education, public health, and business sectors. The factors that this model draws attention to developing creative leadership are the concepts of confrontation, progress, and transformation. According to the model, the creative ability of the individual is implicit, so it must be revealed. Therefore, the creative thinking system of the individual should continue from the beginning to the end of the education life, that is, it should be supported with adequate training at every stage from primary school to university.

Current economies face an increasingly complex society, explosive technological change, increasing social demands, and increasingly dwindling materials and natural resources. So leaders understand the importance of using individuals' unique talents and creative energies to address these issues and problems sensibly. From this point of view, creative leadership is an approach used to transform employees from dependency to independence. Because creative leaders are willing to take risks on people. It is also necessary to develop creative leadership and implement changes, to set goals and empower them. In brief, some considerable factors such as focus, empowerment, creating opportunities, coaching, and transformation are included in creative leadership strategies (Sisk, 2001). The main ultimate goal of all processes that require motivation and focus is to increase performance, innovation, productive thinking, and working.

When looking at the role of the creative leader in the relationship between change, innovation, and leadership, important issues stand out. Creativity is a necessary process for managing change, so a leader cannot manage change without a broad perspective. In this complex change process, leaders help to grow individually and institutionally by using productive opportunities. Therefore, leaders must put creativity at the center of leadership ability to drive change. As enriching the creative thinking of others is an individual skill, such responsibility is placed on the leader. According to Puccio et al., (2010), creative thinking is not a very comfortable and easy process, because it requires a difficult process that involves changing previous ways of thinking, beliefs, prejudices, and one's mindset.

To realize the leadership of the future, contemporary leadership is needed that systematically creates a softening and refreshing climate. Critical outputs that make using the opportunities provided by information technology increasingly priority are creating a successful organization that is integrated with computers and analytic thinking, and the skilled employee who takes responsibility with the principle of creativity. Creative processes in information society management will surpass the successful horizons of organizations in the coming centuries and bring high speed and dynamism to the quality participation of many new resources waiting to be discovered.

It draws attention to the interaction between leadership, participatory approach, communication, and continuous learning from the perspective of the system approach, which deals with concepts from a broad perspective. The classical understanding of team leadership is extremely difficult to sustain in times when complexity and dynamics have risen to such high levels that very few individuals can assimilate them. According to Schieffer (2006), the process of ensuring continuous participation in the context of creativity and communication in the development of solutions covering the entire institution is expressed as participatory or co-creative leadership. Co-creative leadership elements as a new leadership approach can be summarized as follows:

- The systems theory perspective contains the answer to the question of what is being led.
- The cybernetic perspective contains the answer to the question of how are systems led.
- The constructivist perspective contains the answer to the questions of how can members of a system be led, and how can they go from parts to a whole system.
- The communications theory perspective contains the answer to the question of how do members of a system interact within systems.

Looking at the questions listed and the answers obtained, it is seen that there is progress from an individual perspective to a systemic perspective. In this process, while individual perspectives include the isolated actions, multi-perspectives and system approaches include collective actions to achieve some common objective.

In summary, it can be said that creative leadership, which includes a participatory and system approach, is at the center of modern organizations. It is necessary for the development of an organization to formulate in a way that enables the participation of other individuals in all organizational processes, which includes the determination of leadership, vision, strategy, duration, structure, and rules. It is a leadership approach that emphasizes common processes as it creates a system connected with inclusion and individual perspectives. Participatory or co-creative leadership ensures the successful harmony of the organization with its environment as a whole.

Leadership and Teamwork For Innovation

Today, leaders turn into individuals who exhibit common leadership behaviors with the team rather than performing miracles alone. The traditional concept of leadership, which is tried to be explained with an individual managing hierarchical systems and structures, has begun to be defined by the collective activities of individuals working together. So, the phenomenon of leadership has turned into a set of behaviors shared

by these individuals or organizational members. Creative leadership is mutually influenced by many factors related to the team (Harris, 2012).

The factors that influence leadership quality and qualities are a possibility, capacity, motivation for success, responsibility, participation, and status that will enable the achievement of the task by focusing on the motivation and development of individuals in the formation of the desired work team. Creative leaders teams are needed to do things differently and to find different solutions to problems with the findings obtained from new approaches to solving long-term problems. Rickards & Moger, (2000) summarize creative leadership processes in project team development as an alternative to Tuckman's stage model as follows:

- Explains how to initiate creative power, as well as how to share knowledge, beliefs, and assumptions researched for group benefits.
- Provides vision sharing.
- Emphasizes the importance of a positive environment.
- Struggles by using different perspectives to cope with difficult situations,
- Supports the thought generation processes of group members.

Creative leaders also use their experience in creative problem-solving in business life, using the important knowledge they have acquired in various ways. Because experience-based learning is effective in the success of the creative leader. Stoll & Temperley (2009) take creative leadership as a challenge of our times and emphasize that the main issue is the need for flexibility, adaptation, and creativity. The concept of creative leadership also raises questions about context, levels of creativity, the nature of risk-taking, and measuring impact, among members. As sustainable and continuous learning is a given of the information age if the leader and followers can't learn, unlearn and relearn, they cannot reach sustainability goals and they eventually are lost in informational convergence. By contrast, the informed prescription in current initial training and improvement strategies in organizations can lead to dependency and lack of creativity. Because, just like traditional education, it only involves showing employees what to do by not taking initiative. According to Stoll & Temperley (2009), the necessary conditions for creative leadership are as follows:

- Model creativity and risk-taking,
- Emerge conditions for promoting and nurturing the creativity of colleagues,
- Provide time with space and facilitate the practicalities,
- Keep referring back to core values,
- Use failure as a learning opportunity,
- Set high expectations about the degree of creativity,
- Promote individual and collaborative creative thinking and design,

- Self-consciously relinquish control,
- Expose colleagues to new thinking and experiences,
- Stimulate a sense of urgency even if necessary, generate a functional crisis.

Considering the necessary conditions, it is seen that creativity is related to almost all organizational factors including members, leaders, and organizational structure. While providing empathy and trust are at the beginning of the factors based on human relations, sustainability in learning is also emphasized. In terms of organizational structure, employee participation, redistribution of the leader's responsibilities and communication channels suitable for the exchange of ideas stand out. Taking risks for innovation, being open to new ideas, and creating synergy by taking advantage of the creativity of others is at the forefront.

All the highlighted processes show that the leader is not only pursuing power but also trying to achieve efficient results in a scarce time. Of course, the contribution of personal talents to this process cannot be ignored. Being an empathetic and learning listener is as important as being investigative and supportive. Also, mentoring employees is like an endless cycle that takes time and effort. The establishment of habits such as self-control and self-efficiency requires the intense effort of the employees. Among these intense activities, it is also important to keep training and continuous improvement update.

CONCLUSION AND FUTURE RESEARCH DIRECTIONS

To lead the future, contemporary leadership is needed that systematically softens and creates a refreshing climate. Creating a successful organization integrated with computer and analytical thinking and talented employees who take responsibility with the principle of creativity are critical outputs that make the use of the opportunities offered by information technology more and more priority. Creative processes in information society management will surpass the successful horizons of organizations in the coming centuries and bring high speed and dynamism to the quality participation of many new resources waiting to be discovered.

In this chapter of the book, the concept of creativity is mentioned first. Since it would be a great deficiency not to mention art while talking about the concept of creativity, a multidisciplinary perspective is presented by considering the concept from its artistic aspect. Understanding the way of thinking is one of the methods of seeing the reasons that push the individual to think differently. Sociological elements such as social norms, beliefs, and family structure make the individual think in certain patterns. Many features of the social structure such as being collectivist or individual, the ability to take risks, dignity, and status view differ from society to

society and even to the subcultures of the society. Although these differences and the wide variety from micro to macro make it difficult to classify, it makes it easier to understand and interpret the behavior of individuals according to their situation.

Despite all social assumptions, individuals are advised to look outside the box, that is, get rid of subjectivity by breaking certain patterns and looking from a broader perspective. Only in this way is it thought that new, creative, or innovative solutions will be presented. In the digital age that differences are so important, no need to look too far to understand why it should be thought of that way. Spending as little as ten minutes online shows that the most-watched videos or the most popular topics are simply different and interesting content, regardless of whether it is meaningful or valuable. It is seen that many contents that seem ridiculous at first glance on social media platforms where video sharing was made for a very short time reached millions of views just because it is different from individuals. The fact that watch hours are a new monetization tool makes such platforms popular. Therefore, being able to look at events or problems outside of the box has become even more important and interesting in the digital age.

Since it has become very important to reveal the creative side of each individual, that is to look at events from different approaches, individuals who can do this have become even more valuable. Making confidential information efficient and transforming it into a commercial resource has become one of the indispensable elements of the sustainability or success goals of business life. Therefore, in parallel with these developments, the importance of leaders who can bring out the desired creativity has increased. Leaders who know how to learn from differences by going beyond individuals who adopt only their thoughts are seen as more efficient. Benefiting from teamwork to activate the synergy effect, these individuals are seen as the key for employees to present their ideas with participatory approaches and contribute to the awareness process.

While following current developments provide only short-term success, directing the future provides advantages such as being a pioneer in the sector. For this reason, companies that develop high-tech products or have a very short life cycle of products attach great importance to creativity. The necessity of organizational elements to provide a suitable environment for the emergence of a creative leader pushes businesses to address the problem systematically. Since individual success alone is not enough, it is a requirement to adapt effective communication, connection, and other organizational structure elements to the process (Higgins & Reeves, 2006). This imperative requires continuous learning, teamwork, and systematic placement of continuous improvement efforts.

The goal of achieving sustainability through creative leadership is a process that involves a continuous cycle when there is no ultimate goal. Research on this process sheds light on the necessary conditions for creative leadership. While the system

approach deals with the issue of creative leadership in terms of the interaction of subsystems and integrated relationships, the constructivist perspective looks for ways to go from unit to whole by emphasizing interaction. Within the scope of cybernetic perspective, these are considered as goals and implementations; linear input-output thinking is overcome, alternative solutions are identified and made visible, the range of action is expanded for the entire organization, the understanding of leadership is seen as an individual and social phenomenon, etc (Schieffer, 2006). The communication theory perspective emphasizes the effective communication that should be present in all these processes.

The interaction of technology, people and the environment prevents isolated action from being sufficient alone. For this reason, it comes to the fore to learn from multiple perspectives, that is, to learn from differences, to support each other, and to create synergy by acting with the awareness that you are on the same ship. Organizations that can achieve this have system perspectives included collective action. This is the scope of the creative leader who wants to create a new vision with radical changes.

Some suggestions can be given for researchers who want to deepen the subject of creative leadership. Although there are studies that examine some institutions in terms of creative leadership, there are still deep deficiencies in the literature on this subject. Individual situations make it difficult to define, classify and construct success formulas for creative leadership. For this reason, conducting intensive research on the causes, itself, and results of creative leadership will further enrich the field. However emphasizes that when viewed from a different perspective, creative leadership can be considered as a problem of this age and that the main problem is the need for flexibility, adaptability, and creativity. The concept of creative leadership raises questions about context, creativity level, the nature of risk-taking, and the measurement of impact among others. So, these types of problems require further investigation.

The most basic advice for professionals is to follow and adapt to change or drive and direct it. While doing this, it is very important not to forget to respect nature and society. Adopting strategies that have people at their center with value-creating elements such as intellectual capital, tacit knowledge, or creativity requires this. Because in the sustainable approach, understanding the target audience and the market is only possible with human creativity. Participatory approaches such as creative leadership must be supported to transfer this value to the organization. Results such as sustainable competitive advantage or industry leadership are already guiding organizations towards individually-centered approaches. Since the long-term visionary perspective focuses not only on sales but also on creating customer loyalty, it enables the business to be handled interactively with its external environment and its ecosystem.

Suggestions that can be given to practitioners may vary according to the structure of the sector in which the enterprise is located, the degree of scarcity of the resources used the dependence on external companies in logistics processes, and other factors. However, it is a fact that goals such as sustainability and industry leadership require perspectives that allow organic activities such as creative leadership, continuous learning, participatory management with high-performance effective teams. For this reason, a holistic three-legged process can be suggested by first investing in the individual, then adjusting the organizational structure that will support the creative process of the leader, and finally, closely monitoring the external environment. To make these recommendations more specific, it can be added that mental preparation is required to raise awareness for creative leadership. Risky strategic perspectives, such as being ready when the opportunity comes or creating your opportunity in a crisis environment, require such organizational activities; model creativity and risk-taking, emerge conditions for promoting and nurturing the creativity of colleagues, provide time with space and facilitate the practicalities, keep referring back to core values, use failure as a learning opportunity (Stoll & Temperley, 2009). Briefly, these elements handle the organization as a whole according to the system perspective, emphasize the development of the employees in all aspects, and provide an organizational environment suitable for the leader. Leading the change accelerated by technology is only possible with creativity. In a competitive environment where value-creating activities or processes can be easily copied, permanent systems will survive where creativity is linked not to coincidence but sustainable processes.

REFERENCES

Bellows, R. (1959). *Creative Leadership*. Prentice-Hall.

Bonney, C. N. R., & Sternberg, R. R. J. (2016). Learning to think critically. In R. E. Mayer & P. A. Alexander (Eds.), *Handbook of Research on Learning and Instruction* (2nd ed., pp. 191–222). Routledge. doi:10.4324/9781315736419

Chen, Z., Huo, Y., Lam, W., Luk, R. C. T., & Qureshi, I. (2021). How perceptions of others' work and impression management motives affect leader-member exchange development: A six-wave latent change score model. *Journal of Occupational and Organizational Psychology*, *94*(3), 1–27. doi:10.1111/joop.12341

Coenen, L., Hondeghem, A., & Schelfhout, W. (2021). The emergence of leadership for learning beliefs among Flemish secondary school leaders. *International Journal of Leadership in Education*, 1–19. doi:10.1080/13603124.2020.1850869

Cropley, D. H., Kaufman, J. C., & Cropley, A. J. (2011). Measuring creativity for innovation management. *Journal of Technology Management & Innovation*, *6*(3), 13–30. doi:10.4067/S0718-27242011000300002

Fatorachian, H., & Kazemi, H. (2021). Impact of Industry 4.0 on supply chain performance. *Production Planning and Control*, *32*(1), 63–81. doi:10.1080/09537287.2020.1712487

Fauzi, T., Santosa, P., Purwanti, Y., & Nurhayati, N. (2021). The effect of internal elements of strategic management of the organizational structure, management role and employee behavior on corporate mission. *Management Science Letters*, *11*(4), 1189–1196. doi:10.5267/j.msl.2020.11.020

Fingerhut, J., Gomez-Lavin, J., Winklmayr, C., & Prinz, J. J. (2021). The aesthetic self: The ımportance of aesthetic taste in music and art for our perceived identity. *Frontiers in Psychology*, *11*, 4079. doi:10.3389/fpsyg.2020.577703 PMID:33767641

Harper, S. (2012). The leader coach: A model of multi-style leadership. *Journal of Practical Consulting*, *4*(1), 22–31.

Harris, A. (2012). Distributed leadership: Implications for the role of the principal. *Journal of Management Development*, *31*(1), 7–17. doi:10.1108/02621711211190961

Higgins, M., & Reeves, D. (2006). Creative thinking in planning: How do we climb outside the box? *The Town Planning Review*, *77*(2), 221–245. doi:10.3828/tpr.77.2.6

Jamwal, A., Agrawal, R., Sharma, M., Kumar, V., & Kumar, S. (2021). Developing a sustainability framework for Industry 4.0. *Procedia CIRP*, *98*, 430–435. doi:10.1016/j.procir.2021.01.129

Katz-Buonincontro, J. (2008). Using the arts to promote creativity in leaders. *Journal of Research on Leadership Education*, *3*(1), 1–27. doi:10.1177/194277510800300103

Koropets, O. A., & Tukhtarova, E. K. (2021). The ımpact of advanced ındustry 4.0 technologies on unemployment in Russian regions. *Ekonomika Regiona*, *17*(1), 182–196. doi:10.17059/ekon.reg.2021-1-14

Oztemel, E., & Gursev, S. (2020). Literature review of Industry 4.0 and related technologies. *Journal of Intelligent Manufacturing*, *31*(1), 127–182. doi:10.100710845-018-1433-8

Puccio, G. J., Mance, M., & Murdock, M. C. (2010). *Creative Leadership: Skills That Drive Change* (2nd ed.). Sage Publications.

Rickards, T., & Moger, S. (2000). Creative leadership processes in project team development: An alternative to Tuckman's stage model. *British Journal of Management*, *11*(4), 273–283. doi:10.1111/1467-8551.00173

Sadana, D., Gupta, R. K., Jain, S., Kumaran, S. S., & Rajeswaran, J. (2021). Correlates of Creativity: An Association Between Creativity, Personality, and Intelligence, PsyArXiv *Preprint*, 1-22. 10.31234/ doi:osf.io/qdby6

Schieffer, A. (2006). Co-creative leadership: An integrated approach towards transformational leadership. *Transition Studies Review*, *13*(3), 607–623. doi:10.100711300-006-0129-5

Sisk, D. A. (2001). Creative leadership: A study of middle managers, senior level managers and CEOs. *Gifted Education International*, *15*(3), 281–290. doi:10.1177/026142940101500306

Sternberg, R. J., & Lubart, T. I. (1991). Creating creative minds. *Phi Delta Kappan*, *72*(8), 608–614.

Stoll, L., & Temperley, J. (2009). Creative leadership: A challenge of our times. *School Leadership & Management*, *29*(1), 65–78. doi:10.1080/13632430802646404

Tong, S. (2021). Dialectics as immanent critique. Or, dialectics as both ontology and epistemology with a practical intention. *Filozofija i Društvo*, *32*(1), 29–39. doi:10.2298/FID2101029S

KEY TERMS AND DEFINITIONS

Aesthetic: Aesthetic or esthetics is a branch of philosophy that deals with the nature of beauty and taste, as well as the philosophy of art, and examines subjective and sensory-emotional values.

Creativity: Creativity is a phenomenon regardless of whether the object is physical or not whereby something somehow new or valuable is formed.

Epistemology: Epistemology is the branch of philosophy that deals with the nature, scope, and source of knowledge.

Industry 4.0: The Fourth Industrial Revolution is the ongoing automation of traditional manufacturing and industrial practices, using modern smart technology.

Innovation: Innovation is basically the realization of a new commercial idea, method, or process.

Internet of things (IoT): It is a communication network in which physical objects are interconnected or with larger systems.

Interoperability: The ability of computer systems or software to exchange and make use of information.

Leadership: Leadership is both a research area, a practical skill, or art of motivating and influencing other individuals, teams, or entire organizations to act toward achieving a common goal.

LfL: Leadership for Learning is a framework and set of principles in which practitioners and researchers worked together to develop the practice of leadership for learning.

M2M: Large-scale machine-to-machine communication is a new communication paradigm that allows intelligent devices to directly communicate with each other with limited or no human intervention.

Modularity: It is a system property that measures the degree to which densely connected compartments within a system can be decoupled into separate communities which interact more among themselves rather than other communities.

Ontology: Ontology is the branch of philosophy that concepts such as existence, being, becoming, and reality.

Virtualization: Virtualization or virtualisation is the act of creating a virtual version of something, including virtual computer hardware platforms, storage devices, and computer network resources.

Chapter 3
Creativity and Innovation: The Need for Cognitive Skills and Abilities in Developing Entrepreneurs of the Future

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ABSTRACT

The current global pandemic has given rise the need of innovation and creativity from entrepreneurs in order to sustain their enterprise in the ever-changing environment that the world is faced with. This has resulted in many challenges that entrepreneurs have been dealing with as a result of lockdowns in many countries. The objective of this chapter is to provide a guideline to entrepreneurs on how the development of cognitive skills and abilities can assist them in the current situation and in the future. An analysis of current strategies that were used globally will be evaluated, and successful methods of creativity and innovation will be used to develop a framework. The literature in this chapter indicated the need for integrating cognitive ability when implementing creativity and innovation in enterprises. Cognitive function focuses on working memory and certain behaviours when performing a particular action to achieve a certain goal.

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INTRODUCTION

The year 2020 saw the world come to a standstill were nations were asked by the World Health Organizations and Governments to go under complete lockdown. As a result, many businesses were closed for months and then re-opened remotely. During these months most business ran virtually and were online. This change in nature of business has resulted in many businesses shutting down and some surviving although COVID-19 has given educators time to rethink education and to address paradigms of education (Orakcı, & Gelişli, 2021). Months later it is imperative that entrepreneurs develop a means of survival in these tough economic times though creativity and innovation. Entrepreneurship has the potential to reduce poverty, stimulate economic growth and boost innovation, in addition to enhancing social and environmental sustainability (Rashid, 2019). The greatest challenge in resolving this predicament is the creation of more jobs, and entrepreneurship might offer a way towards this aspiration, but potential young entrepreneurs, many of who don't pursue tertiary education after leaving school, don't necessarily have the required education or training in entrepreneurship (Meintjes, 2015). The creative industries are a major source of a dynamic job creation, encompassing many traditional professions that are essential for sustainable livelihood and people's well-being Cognition is important in the processes of perspective-making and moral choices (Kruger, 2016). This study will provide theorical evidence and discussions surrounding the need of cognitive abilities in entrepreneurs in the future and explain how, these cognitive abilities will assist entrepreneurs in the sustaining their enterprise post the COVID-9 pandemic through innovation and creativity. This chapter will therefore answer the following research questions: What are the implications of cognitive skills and abilities in entrepreneurship, how does cognitive skills and abilities effect developing entrepreneurs of the future, what is the link between Sustainability and innovation and creativity and lastly how does self-efficacy impact entrepreneurship

THE PURPOSE OF THE STUDY

This chapter will therefore answer the following research questions: What are the implications of cognitive skills and abilities in entrepreneurship, how does cognitive skills and abilities effect develop entrepreneurs of the future, what is the link between Sustainability and innovation and creativity and lastly how does self-efficacy impact entrepreneurship

METHODOLOGY

This study adopted a qualitative desktop methodology which examined the importance of cognitive abilities in successfully implementing sustainable creativity and innovation in future entrepreneurs post the pandemic, in Africa and globally. The focus considers the impact cognitive abilities and skills in entrepreneurs post the COVID-19 pandemic. The evaluation of secondary research and an intersectional theoretical framework underscores this study. They lack mentorship, self-efficacy, ability and skills required by entrepreneurs who need to sustain their enterprises post the COVID-19 pandemic. The failure to implement cognitive abilities in the implementation of creativity and innovation leads to limitations in sustainable development and the survival of small and medium enterprises globally. The ethical requirement of research is preserved. The chapter is aligned to the current COVID-19 research and ethical protocol identified in scientific literature, which permitted a clinical model for entrepreneurs of the future. The clinical model amalgamates the need for cognitive abilities distinctively in the perspective of innovation and creativity, that reinforces the interest of sustainable enterprises post the COVID-19 pandemic. A review of current knowledge produced in entrepreneurship, education, technology and science on the sustainable impact of entrepreneurs with creativity and innovation is assessed. The secondary data spans from January 2020- March 2021. The key challenges and problems experienced by entrepreneurs are highlighted.

CREATIVITY AND INNOVATION

Innovativeness is seen as one of the key factors in achieving success and increasing the effectiveness of modern business. Studies stress the critical importance of entrepreneurship to organizations as it allows them to capitalize on their abilities to innovate and rapidly respond to opportunities and threats, thus providing an advantage over competitors(Ahmed Qalawa, Shahin, Hassan, & Gaballa, 2015). Literature suggests that creativity and flexibility in which as individuals grow up and develop, they start to learn to cope with an ever-expanding environment and increasing stimuli and make the essential, adaptations (Orakcı, Durnalı, & Aktan, 2019; Orakcı, 2021; Toraman, Özdemir, Aytuğ Koşan, & Orakcı, 2020) are among the essential skills needed for a successful entrepreneurial career (Meintjes, 2015). With the omnipresence of the internet and digital technologies such as cloud computing, virtual reality, the Internet of Things and mobile devices, there has been a proliferation of digital ventures, also referred to as digital startups. These are blossoming enterprises or new organizations established in an uncertain and

volatile environment with the intent of bringing new opportunities to the marketplace (Ansong & Boateng, 2019).

The revolutionary commercial potential of the Internet allows the companies to minimize the turnaround time and keep the potential customer engage in the buying process. The access to the Internet option is available to entrepreneurs to serve the customers as big giants, including Airbnb or Uber (Akhter, 2017). The research by Hernandez has suggested that there is evidence that creation of entrepreneurship based on technology and innovation has a positive impact on the economic development of the country. Information Systems are transforming every aspect of Entrepreneurship from employee recruitment to the production process, from the start-up of the business till becoming the giant, and how to interconnect with all the stakeholders (Akhter, 2017). The innovation network linkage between university-industry-government is commonly known as a triple helix model of innovation. In this model, universities are seen as the sources of new knowledge and technology, industry as the locus of production and government as the source of contractual relations that guarantees stable interactions between stakeholders (Sahasranamam, 2020).

THE ROLE OF TECHNOLOGY IN DEVELOPING CREATIVITY AND INNOVATION

Digital technologies are creating new opportunities for engagement and involvement. They are opening up new arenas for innovation and entrepreneurship. They are democratizing enjoyment of the arts and participation in the arts. More people can now find their voice and express their creativity. Channels of communication have become more open, inclusive and participative. We have more ways of being (Thomas et al., 2019).

E-learning has the potential to support the development of expertise in clinical reasoning by being able to provide students with interactive learning experiences, exposure to multiple cases, and opportunities for deliberate practice with tailored feedback (Davids, Chikte, & Halperin, 2015). Educational technology that includes a shift from a triangle of school-teacher-student to multifaceted, multi-channel alternatives (Durnalı, Orakcı, & Özkan, 2018; Durnalı, Orakcı, & Aktan, 2019; Orakcı, 2020) could enhance learning even in low-resource environments among populations with low literacy levels and in school ages, such as the examples of Ghana/Zambia, Pakistan and India. In addition, the Mexico and Pakistan examples demonstrate the ability to develop and use educational technology on mobile devices, which is encouraging given the rise in mobile device adoption in least developed countries even where personal computers might not be widely available (Rashid, 2019).

UNDERSTANDING COGNITIVE ABILITIES THROUGH SELF-EFFICACY AND MENTORSHIP

Cognitive theory has its origins in the discipline of psychology. Broadly speaking, the theory holds that people's perceptions, their feelings, their thinking and their actions result to a significant extent from processes, which go beyond the simple input provided by the senses (since pre-existing mental models, for instance, are a way of ordering the world and are therefore projected onto the world as it is perceived through the senses) (Misch & Tobin, 2006).When an individual's actions and beliefs are incongruent, this induces a phenomenon known as cognitive dissonance. In order to reduce this dissonance, individuals are self-motivated either to change their behaviors or beliefs, or to rationalize their behavior (Padayachee, 2015). He believes that real options and an entrepreneurial framework are not relevant, emphasizing that the world is changing rapidly and that the need to react in a short time is of great relevance in achieving competitive advantage and creating value for stakeholders. Additionally, he retains several organizational roles as key assets for achieving a high corporate outcome. This is the mind's elasticity in Rocca's opinion (Lombardi, Tiscini, Trequattrini, & Martiniello, 2020).Although cognitive dissonance is a social science concept, it has been used in other areas such as marketing, education and management (Padayachee, 2015). Mentors may act as role models in a vicarious learning relationship which consists in facilitating mentees' self-evaluation and development of entrepreneurial and business skills through social comparison and imitative behavioral strategies (St-Jean, Radu Lefebvre, & Mathieu, 2017).One of the main goals of entrepreneurial mentoring programs is to strengthen the mentees self-efficacy. However, the conditions in which entrepreneurial self-efficacy (ESE) is developed through (St-Jean et al., 2017). Results show that entrepreneurial self-efficacy is positively related to entrepreneurial intentions through the partial mediating effect of entrepreneurial outcome expectations, and that this relationship is consistently significant and positive for individuals with lower, average and higher subjective norms towards entrepreneurship (Santos & Liguori, 2019).

Mentoring can be defined as a one-to-one relationship between an experienced person (a mentor) and a less experienced person (a protégé or mentee) that provides a variety of developmental and personal growth functions(Nabi, Walmsley, & Akhtar, 2019). Mentoring also influences entrepreneurial intentions through socio-emotional support, in terms of role-model inspiration. Mentees suggest a notion of visualisation related to the idea that 'if the mentor can do it, I can do it too' (Nabi et al., 2019). Mentoring are not yet fully explored. As organizational learning consists of both social and cognitive processes, it is necessary to consider organizational learning from both a cognitive and social perspective, especially in the Corporate Entrepreneurship

context where companies have to process information in an ambiguous, and uncertain environment (Thomas, Randolph, & Marin, 2019).

ENTREPRENEURSHIP AND COGNITIVE ABILITIES OF THE FUTURE

The paper shows how the success of SMEs in a dynamic environment is influenced by the central resource, "the entrepreneur", whose entrepreneurial mindset, culture and leadership are essential and partially replicable. They allow strategic management to seek opportunities and develop innovation, achieving competitive advantages and creating wealth (Lombardi et al., 2020). Acting strategically becomes essential in producing entrepreneurial organizations that are change oriented and able to recognize opportunities, resulting in better outcomes or a longer survival of the firms. According to some authors, SMEs and start-ups seem more skilled in identifying entrepreneurial opportunities and less effective at developing and sustaining the competitive advantages (Lombardi et al., 2020). Second, start-ups have used the crisis as an opportunity to do focused R&D and develop new solutions for COVID-19. For instance, Aqua technologies developed chemical formulations that disinfect public spaces using a water-based sanitizer (Sahasranamam, 2020).

SMEs are vital to most economies across the world, especially developing and emerging economies. The World Bank states that formal SMEs contribute up to 60% of total employment and up to 40% of national income (GDP) in emerging economies, and these statistics would be significantly higher if it took into account informal SMEs (Ndiaye, Abdul Razak, Nagayev, & Ng, 2018). Education and involvement in the creative arts can enhance, enable, enrich and empower. It can stimulate the creativity and commitment that leads to successful innovation and entrepreneurship (Coulson-Thomas, 2017).While unnecessary innovation and change for the sake of change should be avoided, incremental improvement and excellence in current activities may not be enough. Survival, sustainability and successful adaptation may depend upon creativity, innovation and entrepreneurship

Scholars in entrepreneurial cognition have shown that entrepreneurs' cognitive processes mediate the relationship between an entrepreneur's social networks and the progress of the new venture (Thomas et al., 2019). Research in entrepreneurial cognition has called for a better understanding of interactions between contextual variables and cognitive processes. Based on previous work done on organizational learning and social networks(Thomas et al., 2019). Intrinsic cognitive load refers to the essential processing required to understand the learning material. When the material consists of multiple interacting elements of information, the intrinsic cognitive load will be high and learners therefore experience it as difficult (Davids,

Chikte, & Halperin, 2015). Each form of strategic entrepreneurship has a different innovation focus. The focus of innovation sustained regeneration is continual product or service innovation; the focus of organizational rejuvenation is the firm's internal processes, structures and capabilities; the focus of strategic renewal is the way the firm competes; and the focus of domain redefinition is to find new markets (Thomas et al., 2019). 2015).

Cognitive load theory builds on well-established models of human memory that include the subsystems of sensory memory, working memory and long-term memory (Davids et al., 2015).Researchers have argued that self-esteem to be the root of the way in which actions are displayed, and that healthy self- esteem is correlated with one's happiness, mental health, and positive adjustment(Chi, Kim, & Kim, 2016). To develop stable self-confidence, and therefore have a relatively low chance of being overwhelmed by external difficulties, and can cope with difficult situations in an appropriate way (Chi et al., 2016). Social cognitive career theory explains educational and career-related interests, choices and performance behaviors (Santos & Liguori, 2019). Cognitive career theory is grounded on three core constructs: self-efficacy beliefs, outcome expectations and goals. Liguori defined a theoretical framework grounded on social cognitive career theory to explain individual entrepreneurial activity, positing that this theory accounts for the complexity and diversity of mechanisms and conditions that matter for entrepreneurial intentions, contrasting with classic intention-based models which consider entrepreneurship as a sequential process, undermining the uncertainty and non-linearity of the entrepreneurial journey (Santos & Liguori, 2019). Social cognitive career theory also devotes great importance to relevant personal contextual factors, as for example perceived subjective norms, that is the social support received from "reference others" (i.e. family, close friends, mentors and entrepreneurship faculty).

The cognitive dimension of entrepreneurship and its decision making process have a relevant role in the understanding of entrepreneurs thinking and decision-making (Lombardi et al., 2020). A study by Liguori found Results of the relevant regression analysis indicated that entrepreneurial outcome expectations did, in fact, partially mediate the influence of entrepreneurial self-efficacy on entrepreneurial intentions (Santos & Liguori, 2019).

THE IMPLICATION OF COGNITIVE SKILLS AND ABILITIES IN DEVELOPING ENTREPRENEURS OF THE FUTURE

This study responds to the numerous calls on the importance of creativity, innovation and education mechanisms, frameworks, competencies, and skills, which is imperative for a sustainable planet and economic development. This chapter will increase the

development, knowledge and understanding of creativity, innovation and education needed now and, in the future, and help policymakers in designing and implementing policies that are more effective in the post-pandemic era that can stimulate creativity, innovation and better education. The focus of the chapter is on creativity and innovation and how education can develop these cognitive abilities and skills, as well as, how cognition can be improved to meet future challenges and demands using creativity and innovation. Therefore, this study will contribute to the expansion of knowledge on this issue. This study further has the potential to contribute to the governance, management, entrepreneurship, psychology and society by exploring an educational perspective on how entrepreneurs post pandemics can deal with creativity and innovation in Africa and in an intercontinental perspective and how they can creatively assist, support and educate small and medium enterprises and even communities who form part of informal entrepreneurship with the importance of cognitive abilities in successfully implementing a sustainable means of creativity and innovation . This study has the potential to make a meaningful contribution in this regard by developing and stimulating a greater interest and improve the interpretation of results of the livelihood and success of entrepreneurs in society, local communities, entrepreneur's in Africa and globally.

A study conducted by de Villiers found t that "entrepreneurial women who develop their cognitive ambidexterity and draw on both effectual and causal approaches when initiating entrepreneurial initiatives are more likely to experience successful outcomes"(de Villiers Scheepers, Boshoff, & Oostenbrink, 2017). Internal controls at a strategic level include implementing cognitive computing governance and a human skills and resource policy and strategy, while internal controls at an operational level need to address the risks associated with data, infrastructure, service providers and lifecycle controls (van Wyk, 2018). Cognition must be regarded as people's attempt to make sense out what they already know and also out of what they are observing (F. P. Kruger, 2016). Social cognition as the manner in which people observe each other and try to make sense of other cultures and the people of those cultures(Kruger & De Klerk, 2016).

SUSTAINABILITY THROUGH INNOVATION AND CREATIVITY

The primary basis of the term sustainable entrepreneurship is the concept of sustainable development. Sustainable development aims at the protection of nature, life support, and community in the pursuit of perceived opportunities to bring into existence future products and processes with both economic and non-economic gains to individuals, the economy, and society (Urbaniec, 2018).This level of enterprise innovativeness can be considered as a sufficient basis for implementing

sustainable-oriented activities. It means that innovations can have a significant impact on the transformation of an industry toward sustainability (Urbaniec, 2018). Therefore, the main focus of crisis management research is on understanding how to bring organizations or systems back into functioning in the aftermath of a crisis (Sahasranamam, 2020).Full and productive employment and decent work were targets in Millennium Development Goal 1 to eradicate extreme hunger and poverty: employment is considered the main route out of poverty. Employment also features prominently among the Sustainable Development Goals (SDGs) which were rolled out in 2015 (Kilimani, 2017) . One component of the possible solution to the issue of sustainable economic development may lie in a clear understanding of the context within which organisations perform, with specific relevance to the way in which knowledge is managed (Misch & Tobin, 2006).

The importance of sustainable entrepreneurship can be considered as a unique perspective that links the creation of economic, social, and environmental values with a focus on the well-being of future generations (Urbaniec, 2018). Thus, sustainable entrepreneurship can be defined as a type of business development practice that provides new opportunities for innovative corporate activities at the nexus of ecological and social issues (Urbaniec, 2018).

For instance, supporting female entrepreneurship contributes to women empowerment, improving quality of life, as well as economic growth and entrepreneurial diversity, hence directly contributing to the advancement of SDG 5 (Rashid, 2019). The application of cognitive function and skills development on sustainable development in entrepreneurs

A SUB-SAHARAN AFRICA PERSPECTIVE

Neither youth nor employment are new to development discourse and policy in sub-Saharan Africa. But while both have been on the development agenda at least since independence, over the last decade policy and programme interest in both youth and employment has increased dramatically. Specifically, the youth employment challenge provides an increasingly important focus for policy, intervention and research throughout the continent (as it does globally) (Ayele, Khan, & Sumberg, 2017).

Moreover, the World Bank also estimates that 600 million workers will enter the global workforce over the next 15 years, mainly in Asia and Sub-Saharan Africa (Ndiaye et al., 2018). The availability, or lack thereof, of infrastructure, can also have a significant impact on firm performance. This is particularly important in the case of emerging economies, where rural or regional infrastructure may be undeveloped or underdeveloped (Ndiaye et al., 2018). To support entrepreneurship development, Africa needs broad financial inclusion and state institutions that are

more effective at enforcing contracts. Access to credit was non-significant and therefore did not contribute to the dependent variable (entrepreneurship quality and depth of entrepreneurial support in Africa). Access to electricity and political governance were statistically significant and correlated positively with the dependent variables. Finally, contract enforcement was partially significant and contributed to the dependent variable (Atiase, Mahmood, Wang, & Botchie, 2018).

Africa has a higher business discontinuation rate of 16 per cent when compared with that of the European Union and the USA who have 4 per cent in total (Ansong & Boateng, 2019).

GOVERNANCE AND POLICY REFORM

Policies should also be put in place to incentivize formal registrations of SMEs, simplify regulations and taxes, and encourage the knowledge of the taxes and the legal SMEs' system. Investing the drivers of performance is crucial for emerging countries for the reason that the policy implications are of great significance to governments working to promote financial access for SMEs as they understand the paramount role that SMEs play in their nation economic development (Ndiaye et al., 2018). For small firms, we recommend that policymakers implement policies to facilitate and motivate formal registration, consultation with tax officers, use of domestic inputs/supplies, and access to finance (bank loan/line of credit) seem to stimulate their growth (Ndiaye et al., 2018).

Business contract enforcement is often seen as weak or almost non-existent in Africa (Atiase et al., 2018). Universities and academic research institutions began to partner with industry and government. The higher education sector, particularly the trained engineering workforce developed a range of innovations of varying technical complexity that are suited to the local contextual needs (Sahasranamam, 2020).

The government's assistance in the process of to the enterprise business models' transformation would bring greater returns as increased productivity, increased revenues and superior long-term strategic positioning. The reliance on information systems would offer value added to entrepreneurship processes, including helping managers to make sound decisions, business processes become efficient, allowing to escalate profitability (Akhter, 2017). While evaluating the response in the aftermath of the economic crisis in a Portuguese municipality, they found that triple helix model was simplified and adapted to mobilize local innovation actors, to legitimize policy aspects and to improve coherence between the policy aspects of innovation (Sahasranamam, 2020).

THE POST PANDEMIC ERA

This new economy has created an ecosystem where new business models and processes such as e-businesses can thrive(Ansong & Boateng, 2019). The "digital economy" is viewed as a vague concept surrounding a set of industries, a set of outputs (products and services), a set of inputs, production and distribution platforms that are used at varying intensities across the global economy as a whole(Ansong & Boateng, 2019). Digital enterprises therefore need to leverage these devices and technologies to compete and survive in the global economy(Ansong & Boateng, 2019). Human capital is another factor that is often positively associated with firm performance. Some studies tend to focus on large firms in developed economies, with much less attention paid to SMEs and developing economies (Ndiaye et al., 2018). Empowering individuals with scient academic education create the necessary human capital to enhance product and process innovation (Rashid, 2019). A study by Saleh reveal a significant impact of institutional pressures on the degree of e-business entrepreneurship. The findings also reveal a direct relationship between the degree of e-business entrepreneurship and the actual usage of e-business innovations. Moreover, the degree of e-business entrepreneurship and the actual usage of e-business innovations have a direct impact on long term sustainability (Ahmed Qalawa, Shahin, Hassan, & Gaballa, 2015).Notably, our research suggests that if the concept applies only to a narrow range of industries and places, it may not have the universal explanatory power that scholars hope (Brydges & Pugh, 2021) .

CLINICAL MODEL FOR ENTREPRENEURS POST THE COVID-19 PANDEMIC COGNITIVE SKILLS AND ABILITIES IN DEVELOPING ENTREPRENEURS OF THE FUTURE

The proposed clinical model serves as a guide to global entrepreneurs and educational institutions in future, post the COVID-19 to ensure that there is sufficient knowledge and awareness on cognition and cognitive abilities for entrepreneurs of the future to function effectively and maintain sustainability through creativity and innovation. Cognitive abilities as seen as a compensatory strategy which alters the persons environment for performing specific functional activities such as memory and concentration. The clinical model propositioned serves as a parameter for entrepreneurs, educational institutions, business stakeholders, government bodies, international regulatory bodies and scholars to advance the current need for cognitive abilities in sustainable organisations of the future in the entrepreneurial sector. The model advances policy reform, institutional modifications and a shift to acknowledging the challenges imposed on entrepreneurs amid the global COVID-19

pandemic, and proposes away forward as a guide to overcome these challenges in the future of business, post the global COVID-19 pandemic.

Table 1.

A Clinical Model			
Innovative and Creative approaches for Entrepreneurs of the future			
Clinical Model for Entrepreneurs post the COIV19 Pandemic: Ccognitive skills and abilities in developing entrepreneurs of the future			
Key Indicator	**Existing Protocol**	**Proposed Modification**	**Clinical Steps**
Cognitive Abilities In entrepreneurs	Entrepreneurs are learning about what Cognitive abilities are, but are not fully aware	Integration of Cognitive abilities in educational institutions, training and mentorship programmes.	Establish local, national and continental and inter-continental relationships and networks between professional bodies that work collectively to identify specific challenges faced by Entrepreneurs, via educational institutions, training and mentorship programmes.
	Ineffectually considerations of the importance of the elements of cognitive abilities on sustainability.	Proposed adjustment considering a diverse range of training programmes, educational courses and community initiatives.	Create national and continental task teams to advance the implementation of elements of cognitive abilities on sustainability structures for entrepreneurs.
Sustainability	Entrepreneurs face shut down post national lockdowns due to the COVID-19 pandemic	Implement enterprise innovativeness and creativity	Implementation of the Sustainable Development Goals (SDGs). Is one component of the possible solution to the issue of sustainable economic development may lie in a clear understanding of the context within which organisations perform, with specific relevance to the way in which knowledge is managed by local, national and continental and inter-continental Entrepreneurial bodies
Creativity and Innovation	The use of exiting roadmaps of creativity and innovation.	Create a network of scholars with a shared understanding of the creativity and innovation that would be effective post COVID-19 roadmaps.	Draw on professional Entrepreneurial bodies to establish an advisory committees with specialists to develop clear and concise intelligence on creativity and innovation development post the pandemic
	Intensified creativity and innovation strain during COVID-19	Modified creativity and innovation COVID-19 interventions.	Collaboration between entrepreneurs, scholars and enterprise developers to deliver post COVID-19 creativity and innovation interventions.

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Table 1. Continued

A Clinical Model			
Innovative and Creative approaches for Entrepreneurs of the future			
Clinical Model for Entrepreneurs post the COIV19 Pandemic: Ccognitive skills and abilities in developing entrepreneurs of the future			
Key Indicator	**Existing Protocol**	**Proposed Modification**	**Clinical Steps**
Self-efficacy	Lack of Self-efficacy in entrepreneurs who need to sustain their enterprises post the COVID-19 pandemic	Implement procedures for entrepreneurial intentions through the partial mediating effect of entrepreneurial outcome expectations	Establish procedures for entrepreneurs to follow for self-evaluation and development of entrepreneurial and business skills through social comparison and imitative behavioural strategies.
Mentorship	Mentoring are not yet fully explored.	Include Mentoring in training and educational programs	Develop educational entities for organizational learning from both a cognitive and social perspective, especially in the Corporate Entrepreneurship filed
Lack of Awareness and Education Surrounding COVID-19	Uninformed COVID-19 knowledge.	The creation of networks, databases and information dissemination on the use of cognition and creativity and innovation .	Accessibility to guides and protocols by Corporate Entrepreneurship bodies providing clarity and support for Entrepreneurs during the pandemic.
Government Intervention and Policy Reform	Entrepreneurship during the pandemic research is limited.	The development of research grants and international networks to yield scholarship.	Strengthen existing human resource policies. Legal compliance via countries legal frameworks.
	Entrepreneurs during the pandemic marginalized by scholars.	Increase funding for cognitive training and research.	Include government SETA's and training programs in the development of cognitive abilities that will lead to sustainable businesses post pandemic .
Technology	Technological practices are poorly instituted.	Promote the relationship between education, creativity and innovation, with an important link to technology and how this relationship can be enhanced	Promote inclusivity of practices by integration and adaptability methods established by scholars for Entrepreneurs during the pandemic

RECOMMENDATIONS AND CONCLUSION

This study justifies the needs for future research on the importance of cognitive abilities and the positive effect that it has on sustaining creativity and innovation in entrepreneurs. Future research needs to focus on the creating awareness of the concept of Cognition and cognitive abilities so that entrepreneurs understand the benefits of adopting it. The study points out on the need for elements of cognitive abilities such as self-efficacy, mentoring, developing skills for decision making, attention and concentration and memory that entrepreneurs of the future need to develop in order to survive post the COIVD-19 pandemic. The pandemic has resulted in a transformation of the world of business and the change and adaptation of this is pivotal for successful development and survival of entrepreneurs. Evidence has highlighted the need for sustainable creativity and innovation, which can be achieved through the implementation of cognitive elements and abilities. The study recommends that policy framework and government include training for cognitive abilities in their guideline to entrepreneurs. The study also recommends that the entrepreneurs of the future adopt cognition thought the sustainable development goals of creativity and innovation at an African, continental and global level.

REFERENCES

Ahmed Qalawa, S. A., Shahin, E. S., Hassan, N., & Gaballa, S. (2015). Relationship between cognitive motivation, student adjustment and attitude towards nursing profession: As student nurse perceived. *Journal of Emerging Trends in Educational Research and Policy Studies*, *6*(1), 102–112. https://journals.co.za/content/sl_jeteraps/6/1/EJC178654

Akhter, P. F. (2017). Unlocking digital entrepreneurship through technical business process. *International Journal of Entrepreneurship and Sustainability Issues*, *5*(1), 36–42. doi:10.9770/jesi.2017.5.1(3)

Ansong, E., & Boateng, R. (2019). Surviving in the digital era – business models of digital enterprises in a developing economy. *Digital Policy. Regulation & Governance*, *21*(2), 164–178. doi:10.1108/DPRG-08-2018-0046

Atiase, V., Mahmood, S., Wang, Y., & Botchie, D. (2018). Developing entrepreneurship in Africa: Investigating critical resource challenges. *Journal of Small Business and Enterprise Development*, *25*(4), 644–666. doi:10.1108/JSBED-03-2017-0084

Ayele, S., Khan, S., & Sumberg, J. (2017). Introduction: New Perspectives on Africa's Youth Employment Challenge. *IDS Bulletin*, *47*(3). Advance online publication. doi:10.19088/1968-2017.123

Brydges, T., & Pugh, R. (2021). Coming into fashion: Expanding the entrepreneurial ecosystem concept to the creative industries through a Toronto case study. *The Canadian Geographer / Le Géographe canadien*. doi:10.1111/cag.12674

Chi, S.-A., Kim, S. H., & Kim, H. (2016). Problem behaviours of kindergartners: The affects of children's cognitive ability, creativity, and self-esteem. *South African Journal of Education*, *36*(1), 1–10. doi:10.15700aje.v36n1a1177

Coulson-Thomas, C. (2017). Stimulating creativity, enabling innovation and supporting entrepreneurship. *Management Services*, 26–29.

Davids, M. R., Chikte, U. M. E., & Halperin, M. L. (2015). Optimising cognitive load and usability to improve the impact of e-learning in medical education [review]. *African Journal of Health Professions Education*, *7*(2), 147–152. doi:10.7196/AJHPE.569

de Villiers Scheepers, M. J., Boshoff, C., & Oostenbrink, M. (2017). Entrepreneurial women's cognitive ambidexterity: Career and cultural influences. *South African Journal of Business Management*, *48*(4), 21–33. doi:10.4102ajbm.v48i4.40

Durnalı, M., Orakcı, Ş., & Aktan, O. (2019). The smart learning potential of Turkey's education system in the context of FATIH project. In A. Darshan Singh, S. Raghunathan, E. Robeck, & B. Sharma (Eds.), *Cases on Smart Learning Environments* (pp. 227–243). IGI Global. doi:10.4018/978-1-5225-6136-1.ch013

Durnalı, M., Orakcı, Ş., & Özkan, O. (2018). Turkey's higher education potential for human capital of eurasian region. In O. Karnaukhova, A. Udovikina, & B. Christiansen (Eds.), *Economic and Geopolitical Perspectives of the Commonwealth of Independent States and Eurasia* (pp. 201–224). IGI Global. doi:10.4018/978-1-5225-3264-4.ch009

Kilimani, N. (2017). Youth Employment in Developing Economies: Evidence on Policies and Interventions. *IDS Bulletin*, *47*(3). Advance online publication. doi:10.19088/1968-2017.124

Kruger, F., & De Klerk, B. (2016). Continuous formation of liturgy through social cognition: Original research. *Hervormde Teologiese Studies*, *72*(3), 1–10. doi:10.4102/hts.v72i3.3170

Kruger, F. P. (2016). Preliminary thoughts on the relevance of the research field of cognition for Practical Theology: Original research. *Verbum et Ecclesia*, *37*(1), 1–12. doi:10.4102/ve.v37i1.1535

Lombardi, R., Tiscini, R., Trequattrini, R., & Martiniello, L. (2020). *Strategic entrepreneurship: Personal values and characteristics influencing SMEs' decision-making and outcomes. The Gemar Balloons case*. Academic Press.

Meintjes, A. (2015). Creativity and flexibility: Essential skills in training learners for a potential entrepreneurial career. *Journal of Contemporary Management*, *12*(1), 268–288. https://journals.co.za/content/jcman/12/1/EJC173869

Misch, A., & Tobin, P. K. J. (2006). Knowledge management and cognitive theory: An African case study. *Acta Commercii*, *6*(1), 133–146. doi:10.4102/ac.v6i1.103

Nabi, G., Walmsley, A., & Akhtar, I. (2019). Mentoring functions and entrepreneur development in the early years of university. *Studies in Higher Education*. Advance online publication. doi:10.1080/03075079.2019.1665009

Ndiaye, N., Abdul Razak, L., Nagayev, R., & Ng, A. (2018). Demystifying small and medium enterprises' (SMEs) performance in emerging and developing economies. *Borsa Istanbul Review*, *18*(4), 269–281. doi:10.1016/j.bir.2018.04.003

Orakcı, Ş. (2020). The future of online learning and teaching in higher education. In Global Approaches to Sustainability Through Learning and Education. Hershey, PA: IGI Global. doi:10.4018/978-1-7998-0062-0.ch003

Orakcı, Ş. (2021). Exploring the relationships between cognitive flexibility, learner autonomy, and reflective thinking. *Thinking Skills and Creativity*, *41*, 1–12. doi:10.1016/j.tsc.2021.100838

Orakcı, Ş., Durnalı, M., & Aktan, O. (2019). Fostering critical thinking using instructional strategies in English classes. In S. P. Robinson & V. C. Knight (Eds.), *Teacher education pedagogy and the importance of critical thinking and conceptualization*. IGI Global. doi:10.4018/978-1-5225-7829-1.ch016

Orakcı, Ş., & Gelişli, Y. (2021). Educational policy actions in the times of Covid-19 and suggestions for future applications in Turkey. In L. Kyei-Blankson, J. Blankson, & E. Ntuli (Eds.), *Handbook of Research on Inequities in Online Education During Global Crises* (pp. 475–493). IGI Global. doi:10.4018/978-1-7998-6533-9.ch024

Padayachee, K. (2015). An Insider Threat Neutralisation Mitigation model predicated on Cognitive Dissonance (ITNMCD). *South African Computer Journal, 56*(1), 50-79. Retrieved from https://journals.co.za/content/comp/56/1/EJC173454

Rashid, L. (2019). Entrepreneurship Education and Sustainable Development Goals: A literature Review and a Closer Look at Fragile States and Technology-Enabled Approaches. *Sustainability*, *11*(19), 5343. doi:10.3390u11195343

Sahasranamam, S. (2020). *Innovation and entrepreneurship amidst coronavirus: a hybrid innovation network response*. Academic Press.

Santos, S., & Liguori, E. (2019). Entrepreneurial self-efficacy and intentions: Outcome expectations as mediator and subjective norms as moderator. *International Journal of Entrepreneurial Behaviour & Research*, *26*(3), 400–415. doi:10.1108/IJEBR-07-2019-0436

St-Jean, E., Radu Lefebvre, M., & Mathieu, C. (2017). Can Less be More? Mentoring Functions, Learning Goal Orientation, and Novice Entrepreneurs' Self-Efficacy. *International Journal of Entrepreneurial Behaviour & Research*, *24*(1), 2–21. doi:10.1108/IJEBR-09-2016-0299

Thomas, N., Randolph, A., & Marin, A. (2019). A network view of entrepreneurial cognition in corporate entrepreneurship contexts: A socially situated approach. *Management Decision*, *58*(7), 1331–1354. doi:10.1108/MD-11-2017-1195

Toraman, Ç., Özdemir, H. F., Aytuğ Koşan, A. M., & Orakcı, Ş. (2020). Relationships between cognitive flexibility, perceived quality of faculty life, learning approaches, and academic achievement. *International Journal of Instruction*, *13*(1), 85–100. doi:10.29333/iji.2020.1316a

Urbaniec, M. (2018). Sustainable Entrepreneurship: Innovation-Related Activities in European Enterprises. *Polish Journal of Environmental Studies*, *27*(4), 1773–1779. Advance online publication. doi:10.15244/pjoes/78155

van Wyk, J. (2018). Cognitive computing governance and risk management. *Southern African Journal of Accountability and Auditing Research*, *20*(1), 71–88. https://journals.co.za/content/journal/10520/EJC-11fd67a2a5

KEY TERMS AND DEFINITIONS

Mentoring: Can be defined as a one-to-one relationship between an experienced person (a mentor) and a less experienced person (a protégé or mentee) that provides a variety of developmental and personal growth functions (Nabi, Walmsley, & Akhtar, 2019).

Sustainable Entrepreneurship: Can be defined as a type of business development practice that provides new opportunities for innovative corporate activities at the nexus of ecological and social issues (Urbaniec, 2018).

Theoretical Framework: Grounded on social cognitive career theory to explain individual entrepreneurial activity, positing that this theory accounts for the complexity and diversity of mechanisms and conditions that matter for entrepreneurial intentions, contrasting with classic intention-based models which consider entrepreneurship as a sequential process, undermining the uncertainty and non-linearity of the entrepreneurial journey (Santos & Liguori, 2019).

Section 2
Innovation

Chapter 4
Collective Innovation for Complex Challenges:
Engaging With Meta-Cognitive Skills and Patterns

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ABSTRACT

Is has now become widely recognized that our world has become increasingly complexified and immersed in societal issues that require a diversity of perspectives to effectively engage. Collective innovation holds the promise of enabling a plurality of views necessary for creating effective innovation strategies. Yet collective processes are beset by a range of issues that are challenging for scholars, researchers, and practitioners to understand and effectively manage. Building on the complexity typologies theory as augmented by insights from the field of systemic design, the authors propose a missing element to enable collective action initiatives – identified as meta-cognitive skills critical to group collaboration and collective innovation processes. They illustrate the proposal with well-known examples and some of the latest studies in the field. They conclude by proposing next steps that educators or practitioners might employ in their own educational, curriculum design, and practice contexts – recognizing the key elements of praxis that connects them all.

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COLLECTIVE INNOVATION

Why Collective Innovation?

Collective innovation is argued to be critically important in environments that are recognized as 'complex' – where there is a rich diversity of views with many possible interpretations, a wealth of interacting variables that are challenging to measure, or many dynamic situational constraints.

This is increasingly relevant in engaging some of our most pressing societal issues – that scale from mitigating the global impacts of climate change to enacting long-term disaster recovery efforts, to implementing initiatives such as health-care policies. Complexity is also seen to pervade contexts such as planning sustainable food systems, managing the emerging socio-technical communication platforms, and enabling multi-stakeholder innovation initiatives.

In the article *Strategy as a Wicked Problem* (Camillus, 2008), the Harvard Business Review author argued that even organizational strategy and its associated innovation efforts have now entered the space of deeply embedded complexity.

As such, complex environments are argued to require an ability to actively engage a diversity of views, while simultaneously enabling a multiplicity of actions in an effective fashion – whether mediated by technological tools or performed in-situ.

This is where collective innovation promises to help.

What is Collective Innovation?

As a concept, 'collective innovation' was popularized in the Sloan School of Management graduate thesis by Slawsby and Rivera (2007), who note a significant challenge in "achieving successful, repeated organizational innovation", where the "hurdles to such innovation run the gamut from psychological to structural to procedural" – positing that, "collective intelligence and openness may enable organizations to surmount these hurdles." Collective intelligence introduces an additional dimension to the concept of collective innovation – while situating it in a context of technological capability.

Yet recent scholarship observes that collective innovation is more than simply technologically oriented. This is especially clear when collective innovation is applied in contexts that are becoming increasingly complex.

For instance, in the domain of agro-ecosystems, researchers note difficulties in "achieving goal congruency and changing perceptions, values and norms of network actors", where exploration is "approached as a problem-solving rather than innovative design process", and where "creativity enhancement and design process management skills are needed" (Berthet & Hickey, 2018).

While the importance of networks and skills is widely acknowledged, researchers do not agree on what might be the key enablers of collective innovation initiatives in a broader sense.

Some researchers posit a technological perspective – where collective innovation is seen "at the intersection of open innovation and collective intelligence" (Wang, 2013). Here, the 'open' aspect also creates challenges in terms of enabling private–collective innovation, and the role of intellectual assets in determining "appropriation strategy, ownership and control, and coordination and industry self-regulation" (Alexy & Reitzig, 2013).

While the economic, regulatory, legal and intellectual property (IP) impacts on firms and organizations are recognized as important considerations, other researchers see collective innovation more in the social context of 'collective genious' – where, they describe the core process as:

Instead of trying to come up with a vision and make innovation happen themselves, a leader of innovation creates a place – a context, an environment – where people are willing and able to do the hard work that innovative problem solving requires. (Hill et al., 2014)

This emphasis on the social dimension – as a key consideration in enacting collective innovation efforts – is widely evidenced in the research literature.

In their 2016 paper, Muthukrishna and Henrich observe that "innovation is often assumed to be the work of a talented few", arguing that "innovations are instead an emergent property of our species' cultural learning abilities, applied within our societies and social networks."

From their perspective, "our societies and social networks act as collective brains", where the "three main sources of innovation are serendipity, recombination and incremental improvement"; arguing that "rates of innovation are heavily influenced by (i) sociality, (ii) transmission fidelity, and (iii) cultural variance" – positing that, "innovations arise as an emergent consequence of our species' psychology applied within our societies and social networks" (Muthukrishna & Henrich, 2016).

In addition to recognizing the importance of emergent properties and applied psychology in the social context, Muthukrishna and Henrich (2016) observe that "ideas interact to change the innovation landscape, constraining and opening new *thought spaces*" – which is particularly relevant towards understanding the concept of collective innovation.

What relationship might such 'thought spaces' have to the collective innovation efforts in general? The perspectives from researchers investigating the phenomena of *collective intelligence* helps to develop further insights.

What is Collective Intelligence (CI)?

In *The Sage International Encyclopedia of Mass Media and Society* Gómez-Diago (2020) observes that the "term collective intelligence was introduced by the media scholar, philosopher, and cultural theorist Pierre Lèvy in the mid-1990s" – where, the idea of collective intelligence "has its roots in the work of John Dewey (1859–1952), a pioneering educator and theorist of knowledge and democracy who discussed the importance of social and collective intelligence as a means for communities to achieve economic and cultural betterment" (Merskin, 2020).

Other perspectives see collective intelligence as a "capability to collectively invent the future and reach it in complex contexts" – and as a particular form of the "oldest human social organization where individuals decide to mutualize their knowledge, know-how and experience in order to generate a higher individual and collective benefit than if they remained alone" (Noubel, 2007).

At the same time, at a more functional level researchers define collective intelligence as the "ability of a group to perform a wide variety of tasks" – where, the key influences are determined as "(a) group composition (e.g., the members' skills, diversity, and intelligence) and (b) group interaction (e.g., structures, processes, and norms)" (Woolley et al., 2015).

The identified 'tasks' include collaborative activities such as the "creative brainstorming problems, puzzles involving verbal or mathematical reasoning, negotiation tasks, and moral-reasoning problems" (Woolley, Chabris, Pentland, Hashmi, & Malone, 2010).

In terms of its functioning, the notion of collective intelligence is considered as an "emergent property that results from both bottom-up and top-down processes" – where, bottom-up processes are defined as the "aggregation of group-member characteristics that contribute to and enhance group collaboration", while the top-down processes are seen to "include group structures, norms, and routines that regulate collective behavior in ways that enhance (or detract from) the quality of coordination and collaboration" (Woolley et al., 2015).

Collective intelligence is also seen from a systemic perspective. Here, researchers observe that "systems thinking and collective action capabilities are increasingly needed to address societal challenges" (Hogan et al., 2020), while arguing that this is impeded by limitations which include "poor critical thinking skills; no clear methodology to facilitate group coherence, consensus design, and collective action" (Hogan et al., 2015).

The concerns around the efficacy of enacting collective intelligence efforts are reflected in the book *Big Mind: How Collective Intelligence Can Change Our World* (Mulgan, 2018), where the Ash Center Harvard University author – and the Chief Executive of Nesta, with decades of service in public work – notes that

"within any group, diverging and conflicting interests make any kind of collective intelligence both a tool for cooperation and a site for competition, deception, and manipulation" – while observing that, "for institutions, the rising importance of conscious collective intelligence is no less challenging, and demands a different view of boundaries and roles."

A more comprehensive consideration of 'boundaries' will be explored later in this chapter. In the meantime, a question presents itself. How might it be possible to leverage the inherent potentiality, group genious and the 'wisdom of crowds' within collective innovation initiatives – while minimizing the possible negative effects and downsides?

One approach is to consider leveraging systemic design methods while developing skillsets in the associated facilitative approaches.

Collective Intelligence, Systemic Design, and Facilitation

Systemic design is increasingly important as an enabler of complex innovation initiatives – given that, "systems theory and design thinking both share a common orientation to the desired outcomes of complex problems", where systems thinking as a field "promotes the understanding of complex problem situations independently of solutions", while the design as a discipline "demonstrate an action-oriented or generative bias toward creative solutions" (Jones, 2014).

While systemic design methodologies functionally integrate systems thinking, design and creativity to enable more comprehensive approaches for engaging complex challenges, researchers outline an insufficiency of educational training programmes that focus on group facilitation in collective intelligence contexts.

Hogan et al. (2020) cite Jackson (2019) who observes that "there are many systems-thinking methods collective intelligence (CI) facilitators", whose skills can be leveraged "when working with groups that seek to address societal challenges" – noting that "educational training programmes supporting the development of CI group facilitation skills are not widely available (Hogan, Hall, & Harney, 2017)", while arguing that "awareness of the need exists (Penuel, 2019)".

The authors further note that "skill in the use of CI methods requires an understanding of group dynamics", where it is observed that "while groups or teams may not be skilled in managing their own group dynamics, CI facilitators need to understand, monitor and manage group dynamics during the application of CI methods", citing Hogan and Broome (2020).

While Hogan et al. (2020) consider group dynamics as essential, "outlining the relevant pedagogical domain territory for educational programme designers" is seen as highly important.

Yet designing education initiatives around the context of collective intelligence – as a key enabler of collective innovation initiatives – is recognized to be challenging due to the presence of a rich diversity of views within multi-stakeholder environments, that are understood differently from the perspectives of various fields; which mandates transdisciplinary approaches.

Collective Intelligence and Transdisciplinarity

The authors of the *Collective Intelligence – Creating a Prosperous World at Peace* (2008) book relay the relevance, dynamics, and possible impacts of collective intelligence – while commenting on its trans-disciplinary character.

In the Public Preface of the book, Atlee observes that many scales and forms of collective intelligence in human systems have different qualities – seeing them as "converging into an increasingly coherent understanding of the intelligence of whole systems, and of life as a whole", where increasingly, "these fields are using methodologies, language, metaphors, and narratives from each other"; offering a possibility to "further the evolution of our culture(s) towards becoming a global wisdom society by supporting these diverse fields to discover each other, talk together and collaborate" (Tovey, 2008).

This trans-disciplinary orientation further highlights the importance of being able to effectively incorporate diverse views and perspectives as a key element of collective intelligence. While collective innovation represents a tremendous opportunity for addressing some of the most exigent societal and organizational issues, it is also challenged by the very diversity of views it seeks to engage – due to the fundamental dialectics and tensions experienced in complex challenges.

COMPLEX CHALLENGES

What are complex challenges? They can be considered from the perspective of a variety of typologies, that are posited to share some key characteristics. Perhaps the most-well known is the typology of 'wicked problems', that will be reviewed first.

Wicked Problems

A common complex challenge typology is the one of 'wicked problems', introduced by Rittel and Webber (1973) – that subtly reframes the concept of *problems* with the one of *dilemmas*.

In the domain of problems, the implicit assumption is that a goal can be defined – along with a recognition when it is reached – to the satisfaction of most participants.

This implies that even technically challenging endevours – such as sending a rocket to the moon – do not qualify as 'wicked problems', since participants can both agree on what the goal actually is, and when it has been accomplished. While it might not be known how to get to the moon, most participants agree that this is a desirable goal – and the discussion focuses merely on *how* to get there.

In contrast, 'wicked problems' are dilemmas. They have no 'stopping rule' – for instance, it is not precisely known when poverty alleviation initiatives are complete, which mandates an arbitrary decision. There is 'no definitive formulation' in dilemmas. While best practices or broad guidelines may be proposed and even generally accepted, the development of an innovation strategy will tend to be a unique exercise for each specific context; where, it is not possible to create a recipe that will work for all organizations.

Rittel and Webber (1973) propose a comprehensive typology of 'wicked problems' – as per:

1. There is no definitive formulation of a wicked problem
2. Wicked problems have no stopping rule
3. Solutions to wicked problems are not true-or-false, but good-or-bad
4. There is no immediate or ultimate test of a solution to a wicked problem
5. Every solution to a wicked problem is a "one shot operation"; because there is no opportunity to learn by trial-and-error, every attempt counts significantly
6. Wicked problems do not have an enumerable (or an exhaustively describable) set of potential operations, nor there is a well-described set of permissible operations that may be incorporated into the plan
7. Every wicked problem is essentially unique
8. Every wicked problem can be considered as a symptom of another problem
9. The existence of a discrepancy representing a wicked problem can be explained in numerous ways. The choice of explanation determines the nature of the problem's resolution
10. The planner has no right to be wrong

Rittel and Webber's typology characterizes the complex nature of 'wicked problems'. As dilemmas, they feature many possible perceptions of a given situation that emerge from the rich diversity of participants – where many viewpoints may seem valid from a certain perspective.

This presents a challenge towards formulating 'what the problem actually is' in collective innovation settings.

While collective intelligence represents a tremendous resource of potentiality, a 'problem' must first be successfully defined for groups to start working on it. The rich diversity of views that represents a capacity to enable insights and ingenuity

also makes it challenging to 'frame' a given issue in a way that stakeholders may universally agree on.

Social Messes

An excellent example of the multiplicity of views within a complex challenge comes from Ackoff (1999), who outlines a story as per below:

A number of years ago several professors at the University of Pennsylvania worked closely with the leadership of a nearby urban black ghetto, helping it in its self-development efforts. During one of the meetings between the professors and the community leaders a member of the community entered with a bit of news that stopped the meeting dead.

There was an 83-year-old-woman in the neighborhood who had organized the 'geriatric set' that had undertaken a number of development tasks in the neighborhood, including the establishment of an infant care center that enabled very young mothers to return to school or work. That morning she had gone for a check-up to a free neighborhood health clinic operated by the university's hospital. She had a weak heart. The check-up showed nothing new. She left to return home. Home was a two-room walk-up on the fourth floor of a large converted house. While climbing the third flight of stairs she had a heart attack and died.

After an extended silence during which all present reflected despondently the professor of community medicine spoke up: 'I told you we needed more doctors in the clinic. Then we could make house calls. If such calls had been available, this never would have happened.'

Everyone nodded agreement. Silence followed until the Professor of Economics spoke up: 'There are plenty of doctors in the city. But since most of them are private practitioners, she could not afford to call one. If her welfare payments or medical benefits had been greater, she could have called one and this terrible thing would not have happened.' (Ackoff, 1999, p. 533)

The story continues to outline how the Professor of Architecture stated, "why don't we require elevators in all buildings of four stories or more? If we did, this would not have happened", while the Professor of Social Work replied, "what a pity you don't know anything about that woman" (Ackoff, 1999), adding that when her son received a scholarship and graduated with honors he unfortunately got estranged from his mother; and that, had there been more investment in social work, the relationship

would have been repaired and the lady would have lived after moving into her son's affluent single-story home, where there were no stairs to climb.

After relating the story, Ackoff observes:

Now, what kind of problem was this? Medical, economic, architectural, or social work? None of them. These adjectives (hence, the disciplines) describe the point of view of the person looking at a problem. They tell us nothing about the problem itself. Any problem can be looked at from a number of different perspectives, but not all are equally productive. However, the point of view from which a problem is first identified is seldom the best one from which to seek its solution. (Ackoff, 1999)

The complex and trans-disciplinary nature of 'social messes' is further identified in Ackoff (1981), with an observation that "a mess is a system of problems", where "a system is a whole that cannot be decomposed into independent parts" – arguing against purely analytical approaches by stating, "it can and has been shown that, a system always has properties that none of its parts have and that these are its *essential* properties."

As complex challenges can be seen as 'systemic wholes' with indivisible and essential properties, systems thinking approaches can help in enacting collective innovation initiatives.

Yet the fact that dilemmas present diverse perspectives – many of which may seem valid – represents both an opportunity and a challenge.

On one hand, it might not be easy, possible or even desirable to preemptively disqualify some perspectives – or promote others – at the beginning of a collective innovation process. This effectively results in an inability to 'frame the question' to the satisfaction of all participants, which makes it challenging to engage in collective intelligence efforts. The very ambiguity of complex challenges makes it difficult to state what the 'problem' is.

On the other hand – and despite the engagement ambiguities embedded in complex challenge contexts – collective innovation stakeholders must do something to 'frame the question' in a way which allows the possibility of engaging to enact positive change.

How might this be best accomplished? Let us turn away from theory for a moment and explore practical case-studies of collective innovation and action strategies in complex challenge contexts.

COLLECTIVE INNOVATION AS ACTION IN PRACTICE: CASE STUDIES

Collective innovation efforts depend on the feasibility of engaging a community of participants in collective action.

Such efforts have a rich history, including the example of Wangari Maathai. After finishing her PhD in England, and when faced with the realities of poverty in her native country, Maathai reframed the issue as something unsuspected – to enable collective action initiatives amidst complex challenges.

Collaborating on Environmental Challenges:

The Example of Wangari Maathai and the Green Belt Movement

"There are opportunities even in the most difficult moments." – Wangari Maathai

Wangari Muta Maathai was born in a Kikuyu community in Kenya, Africa in 1940, where her traditional upbringing fostered a value system rooted in "gratitude, preservation and conservation of the natural world". These ideals were her driving force behind the Green Belt Movement (GBM), which focused on resolving the ecological challenge of soil erosion and desertification that had begun to severely impact Kenya.

Maathai had left her native village a lush green forest and returned to it from an education abroad to find a desert landscape that fostered clashes over resources such as food and water. Maathai was able to note the complexity and potential causality of the situation -- the changing farming practices (which had cut down trees), leading to increasing desertification and lack of resources, and ultimately, growing social unrest fueled by poverty and inequality.

She was able to reframe these challenges into a set of opportunities and decided to help by facilitating communities of women to plant trees in order to reverse soil erosion, stating: "I'm very conscious of the fact that you can't do it alone. It's teamwork. When you do it alone you run the risk that when you are no longer there nobody else will do it" (Dater & Merton, 2008).

In the documentary film *Taking Root: The Vision of Wangari Maathai* (Dater & Merton, 2008) Professor Maathai explains that this undertaking was originally seen as a local joke, yet the GBM planted millions of trees – positively impacting the Kenyan ecology – as well as the social fabric and even the democratic process. Wangari Maathai and the GBM achieved this by using the small, strategic actions (of planting trees) aggregated over time to create a project of massive influence, while also enabling influencing patterns – a pattern language – for success.

A large-scale example of this pattern can be represented as per Figure 2:

Figure 1. The green belt movement – collaboration pattern and social influence – single example

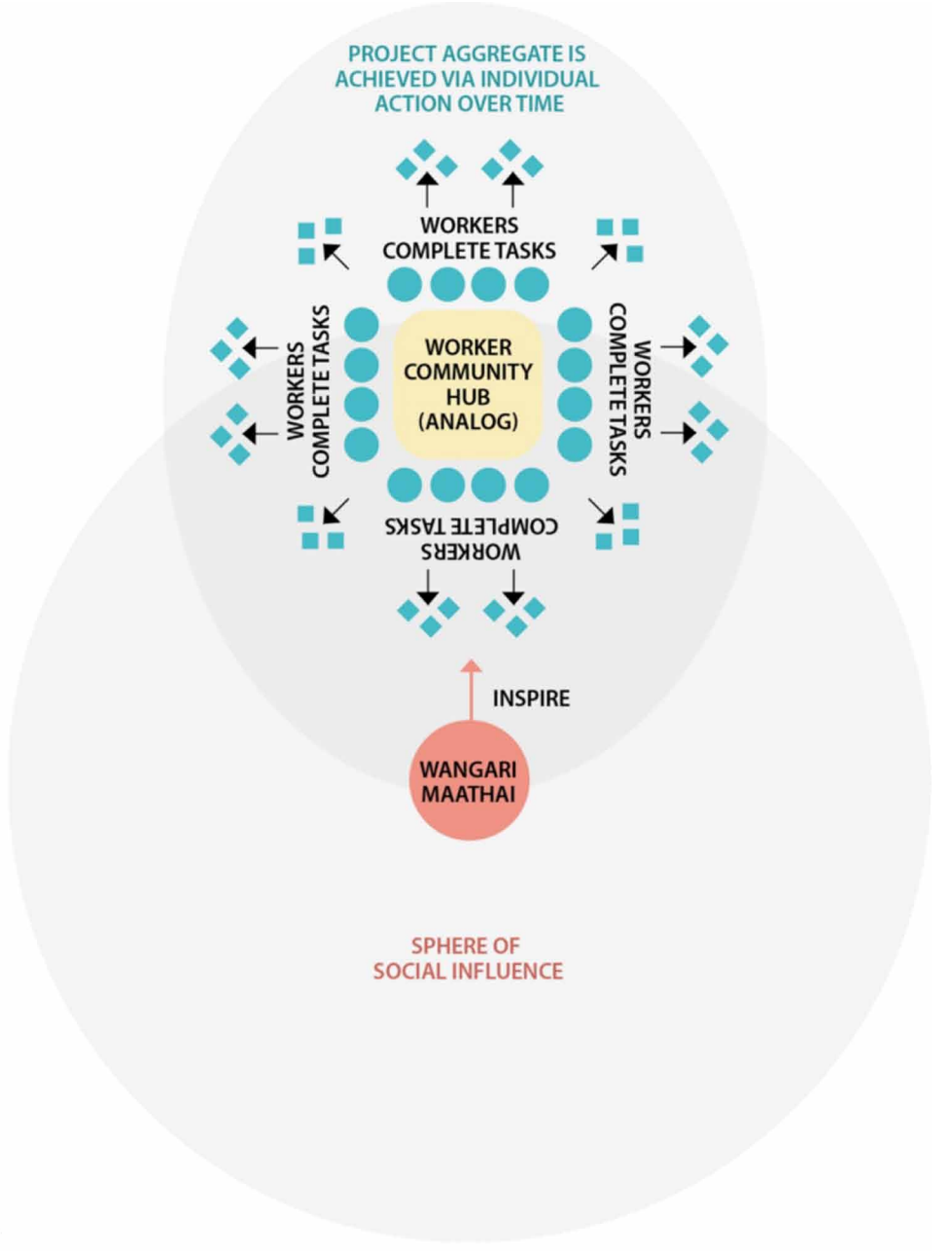
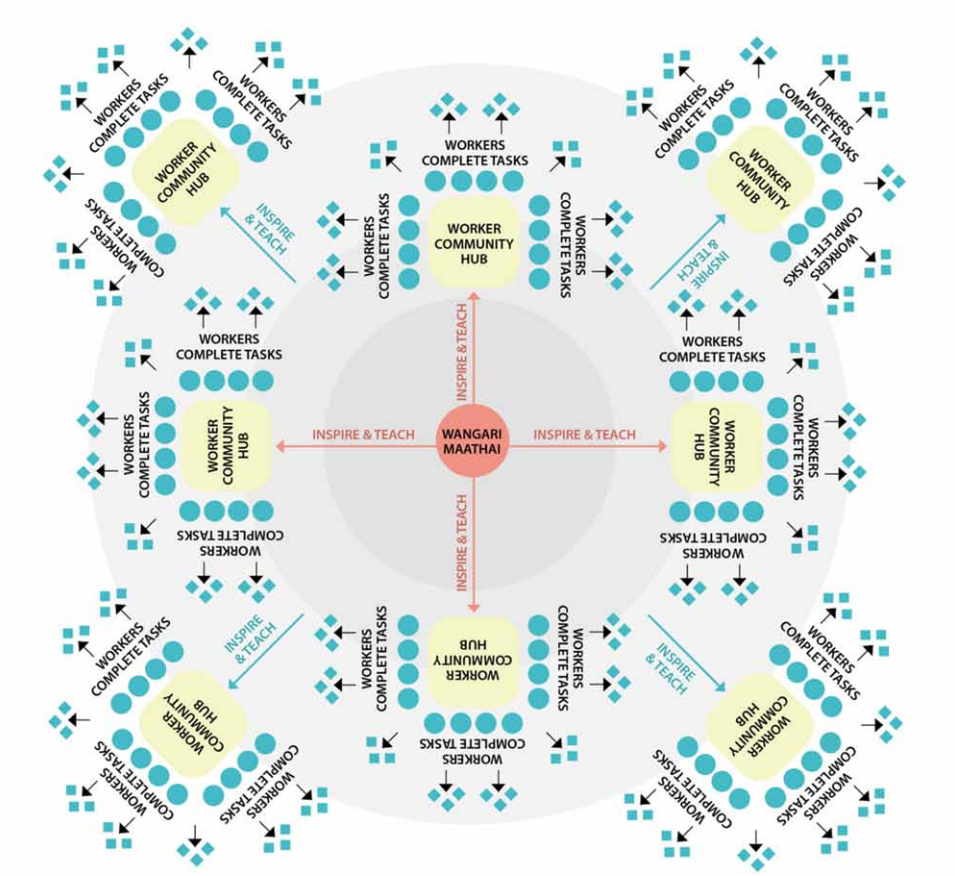


Figure 2. The green belt movement: collaboration pattern and social influence – large scale example

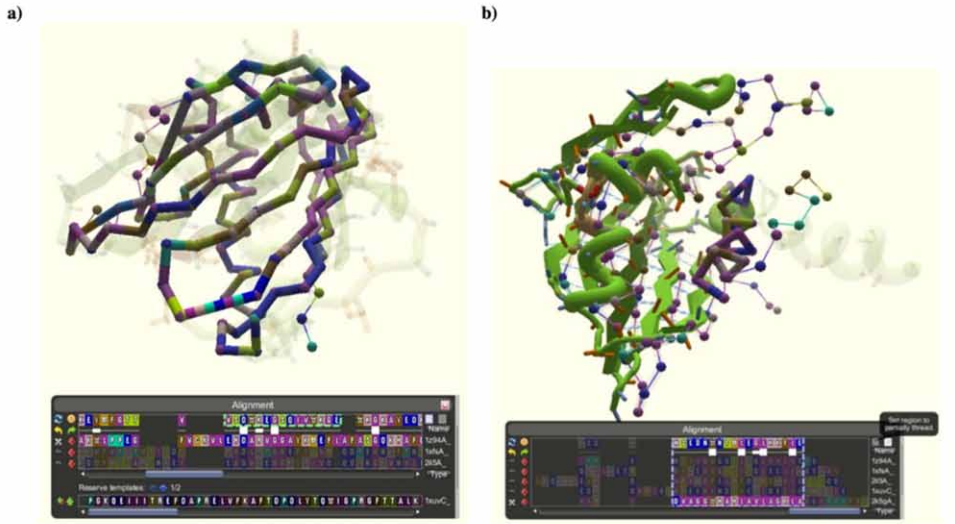


Simply put, the GBM collaborated on a mass scale by creating a community pattern; not only by planting trees, but also by enabling communities across Kenya (of mostly women) to come together for a shared purpose with shared values, to raise funds, pool resources such as child rearing and water gathering, and share knowledge through communal song. This strengthened the agency and importance of women in the community, ultimately allowing Wangari Maathai to enter Kenyan parliament to further fight for ecology, and also to win the Nobel Peace Prize for her efforts.

Collaborating across Boundaries: The Example of the Fold it Research Project

Pattern languages can also be used to create mass collaboration across skillsets, and beyond traditional project boundaries. For instance, due to funding and time restrictions, the FoldIt research project (originally at the University of Washington) decided to open their protein-matching research beyond the lab and engaged the general public to participate in the matching mechanism by playing a game on an open-platform. The initial research project —an AIDS-related enzyme research game— was resolved in mere months with no additional cost, having been unsolved for over a decade (Khatib & FDiMaio et al, 2011). This example of gamified, distributed mass collaboration was also significant because AI was not able to resolve the visual challenge, while people were able to do so without any formal training (Peckham, 2011).

Figure 3. An example of the FoldIt protein matching game (Khatib & FDiMaio et al, 2011).



Collaborating on a Global Scale: The Example of Harvard's Covid-19 Research Study

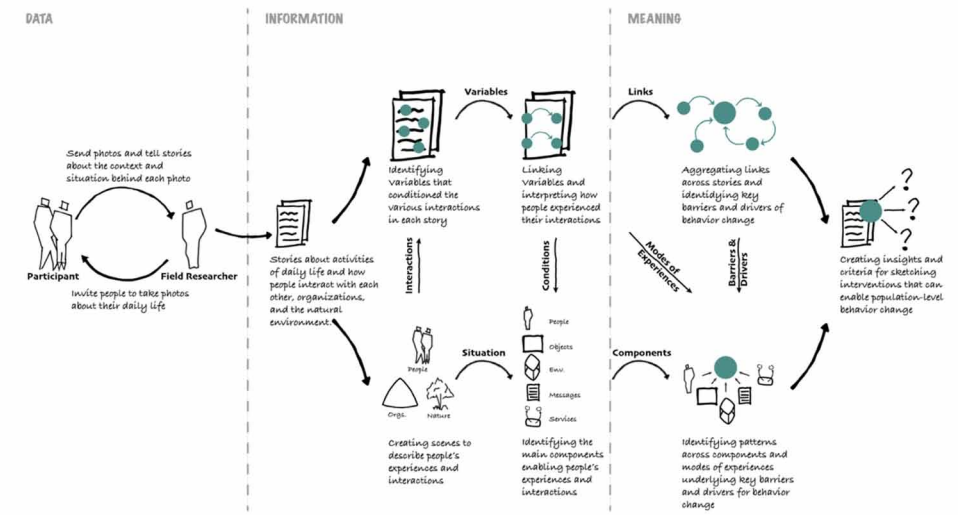
Remember Now is a global-scale, ongoing COVID-19 research study conducted by the Harvard T.H. Chan School of Public Health, in collaboration with universities

in over 15 countries, and participants in more than 1000 households. The study is unique in that the Harvard research team designed a centralized process – with a pattern language – that allows for collaborating universities to join the project at any time and train the student researchers (as well as the participating respondents) in the necessary metacognitive skills to ongoingly collect and codify data across geographies and contexts.

This initiative is both timely and ambitions, as it is the first step to "help individuals and organizations be better prepared for future epidemics than was the case when COVID-19 emerged". In short, the aim is to help public health officials, government leaders and policy makers form rapid response plans, and ultimately, be able to make the cohesive decisions necessary to design policies, services, environments, and objects that support the thriving health of people in the rise of pandemics (Harvard T.H. Chan School of Public Health D-Lab, 2020).

This large-scale undertaking is supported by a three-phase format which collects and codifies data (*Remember Now*), facilitates expert ideation sessions (*Sketch Tomorrow*), and uses the knowledge gained to plan for a bold and better future (*Prototype Future*).

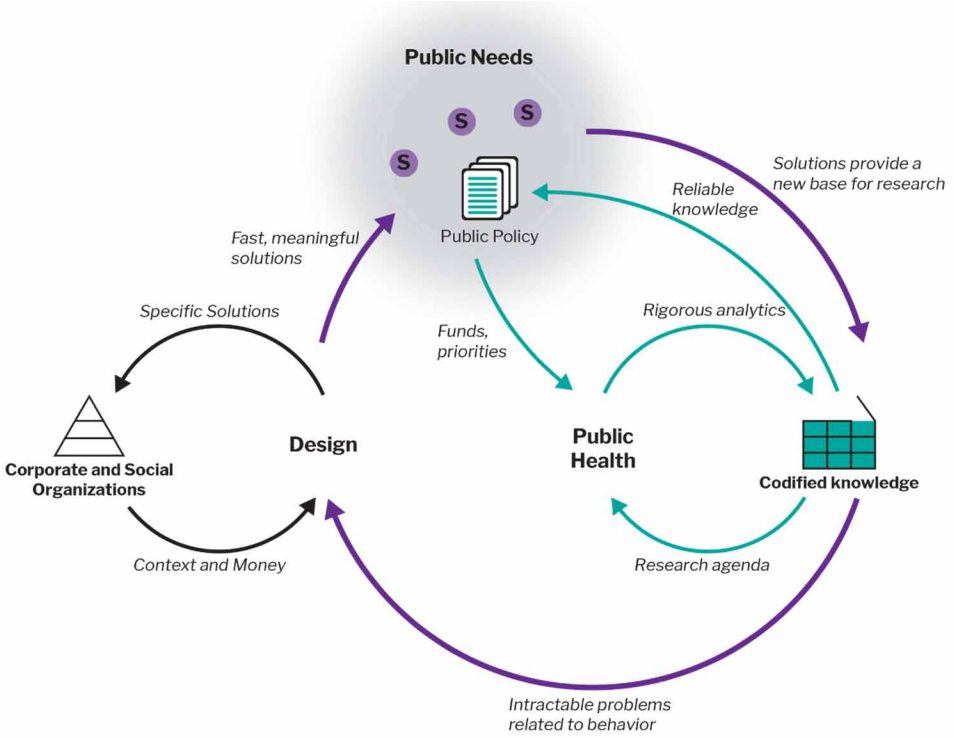
Figure 4. Data – information – meaning (Harvard T.H. Chan School of Public Health D-Lab, 2020).



The design of the research project is supported by a shared value system – of thriving global health in the face of pathogens – and a common pattern language reinforced by a centralized Harvard platform, standardized process for ethnographic data collection, and translation into (differentiated yet shared) knowledge. Privacy of all respondents and collaborating universities are taken into consideration, and teaching opportunities allow professors to enable student researchers to obtain (and practice) new metacognitive skills.

This approach allows the collaborative research teams to pool collected data into a shared data system and find patterns that can lead to surprising insights and relevant intervention prototypes. The process illustrated in the Figure 5 shows how these can work together to positively impact the speed and viability of future policies and initiatives (Whitney & Nogueira, 2020)

Figure 5. How public health can use scientific analysis to develop general principles that provide the basis for policies, protocols and further research (Whitney & Nogueira, 2020).



COLLECTIVE INNOVATION AND PATTERN LANGUAGES

How might it be possible to learn from the action strategies of Wangari Maathai and the Harvard University lab, and replicate them in our own complex challenge environments?

One approach is to leverage the notion of pattern languages.

The concept of 'pattern languages' was introduced by Alexander (1977) – where "each pattern describes a problem which occurs over and over again in our environment, and then describes the core of the solution to that problem, in such a way that you can use this solution a million times over, without ever doing it the same way twice."

Alexander (1977) notes that "no pattern is an isolated entity", stating that:

Each pattern can exist in the world, only to the extent that it is supported by other patterns: the larger patterns in which it is embedded, the patterns of same size that surround it, and the smaller patterns which are embedded in it.

This mutual inter-dependence of elements within pattern languages outlines the reinforcing, recursive nature of relationships that are essential to innovation processes situated in complex environments. This is in part due to the "nature of the relation between problems and solutions, within the individual patterns" (Alexander, 1977), stated as:

Each solution is stated in such a way that it gives the essential field of relationships needed to solve the problem, but in a very general and abstract way – so that you can solve the problem for yourself, in your own way, by adapting it to your preferences, and the local conditions at the place where you are making it.

The emphasis on approaching challenges from the perspective of individual participants, situated in their own locality and understanding, is a distinct enabler of both collective intelligence and collective innovation efforts.

It allows patterns to be *generative* – in a sense that, while applying a pattern will always be different according to the uniqueness of a specific context, their core characteristics provide guidelines that enable participants to express potentialities of their collective genious in ways that enables collective innovation efforts.

INNOVATING WITH AGENCY AND PATTERN LANGUAGES

In what way might it possible to innovate with pattern languages in the contexts of complexity?

One approach is to design for enabling participatory agency as a primary vehicle of enacting change – as one of the key perspectives when considering complex challenges in urban and policy design environments.

In the book *THE PURSUIT OF LEGIBLE POLICY: Agency and Participation in the Complex Systems of the Contemporary Megalopolis*, Lockton (2015) states:

The real goal is understanding how to enact change. Understanding how to act to change the systems we're in is arguably the biggest meta-challenge of our age. We need not just information, but agency: tools for connecting our understanding of how things work and how we can act, around everything from cities, the environment, our own bodies, and networked infrastructure to policies in social, civic and political contexts, emerging technologies and plural considerations of futures.

Lockton (2015) further observes that "we are all part of the same systems" – nothing the highly interconnected participatory nature of complex challenges – while advocating for a 'designing agency' approach to:

1. understand the world
2. understand people's understandings of the world
3. help people understand the world
4. help people understand their agency in the world
5. help people use that agency in the world

…in a progression from understanding to action.

This five-part process is an example of a generative *pattern* – that can be used to inform collective innovation initiatives in a variety of complex challenge contexts.

Yet in terms of applying patterns in a practical sense, Lockton (2015) asks:

But how would we do it in practice? Different techniques would be effective at different levels. Some would be investigatory, some practical, some speculative or critical. Some would give us tools for understanding and learning, some tools for doing, some provocations for reflection.

While the pattern approaches – including those of designing for agency – can be tremendously generative, they also require specific meta-cognitive skills on the

part of the designers to successfully engage the plurality of perspectives, enable collective intelligence and amplify group potentiality in collective innovation settings.

META-COGNITION AS AN INNOVATION ENABLER

How might it be possible to identify meta-cognitive skills that may enable group potentiality in collective innovation settings? Exploring unifying concepts as 'core affordances' of complexity can provide further insights.

Core Affordances of Complexity

While the notions of 'wicked problems' and 'social messes' are highly evocative, they are non-exhaustive in terms of exploring the various dimensions of complexity that collective innovation efforts operate in.

For a more comprehensive consideration, the notions of 'problematiques'

(Ozbekhan, Christakis & Peccei, 1970), 'post-modern complexity' (Cilliers, 1998) and 'super-wicked problems (Levin at al., 2012), present opportunities for identifying common characteristics within the relevant complexity typologies.

Such common characteristics can be thought of as 'core affordances' of complexity – or, as shared features between the various categorizations. Our own work in this area attempts to unify the complexity typologies by positing that what is most relevant is the social dimension – as the space within which innovations take place – and within it, the concept of ambiguities.

The feasibility of constructing cognitive strategies is challenged by the presence of intrinsic asymmetries within complex challenges – which include the formative methodological, action, change, and understanding asymmetries, as per Figure 6:

The presence of intrinsic asymmetries in complex challenge contexts impedes the potential effectiveness of *sense-making*, as a "methodology disciplining the cacophony of diversity and complexity without homogenizing it" (Dervin, 1998) – in such a way where the attempts at understanding complexity dynamically emerge the pervading *cognitive*, *contextual,* and *cooperative* ambiguities (Matic, 2017).

An illustration of related dynamics is outlined in the Figure 7:

In this schema, the *contextual ambiguity* describes the process in which individuals attempting to sense-make in complex challenges are unable to construct a definitive mental model of the world. This is in part due to the underlying dynamics and the presence of profound asymmetries (such as spatial and temporal) within complex challenges – which tends to distort attempts at understanding the enclosing context into a seemingly contradictory set of dialectical tensions.

Figure 6. Asymmetries within complex challenges

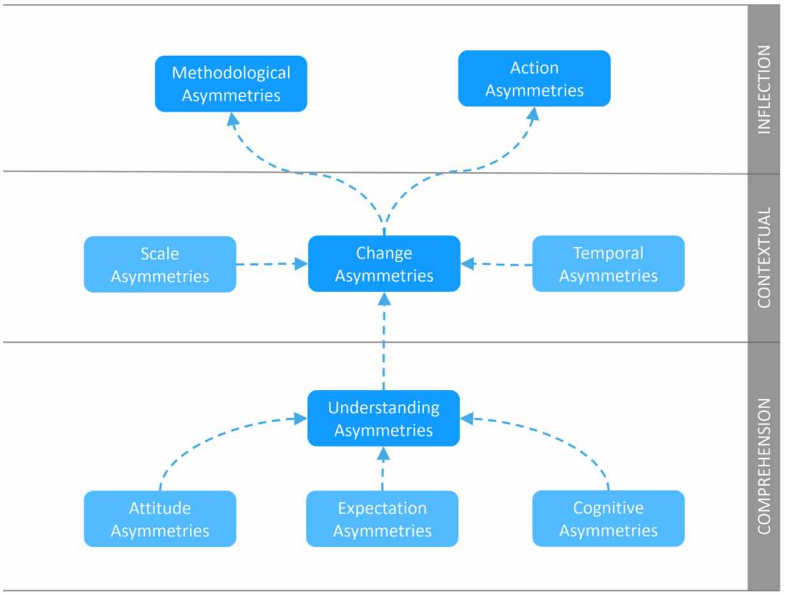
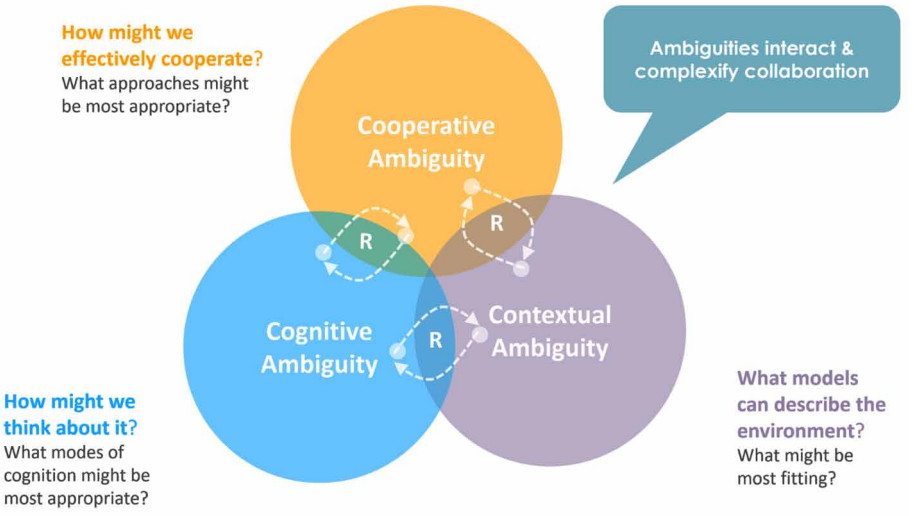


Figure 7. Interacting ambiguities in complex social challenge contexts



Since it is not possible to arrive at a definitive understanding of the enclosing context, this gives rise to the *cognitive ambiguity* – where, it becomes difficult for practitioners to arrive at a preferential mode of thinking about the enclosing context. This in turn tends to create a profound sense of unease in both participants and innovation practitioners – as some type of cognitive certainty is a general preference.

Finally, a lack of a sufficient understanding of the context along with a restricted ability to infer appropriate modes of thinking gives rise to the *cooperative ambiguity* – manifesting as a set of tensions limiting the enactment of collaborative approaches, activities and action strategies.

Due to the intrinsic presence of asymmetries and pervading ambiguities in a socio-cognitive sense, such contexts can also be more appropriately termed as *complex social challenges.* Within them, to counter the dynamics of pervasive ambiguity, the design and innovation practitioners need specific meta-cognitive skills.

Such meta-cognitive skills can help practitioners enact collective innovation – by making it possible to more effectively engage the intrinsic ambiguities embedded within the context of *complex social challenges*.

Engaging with Dialectical Thinking

A key meta-cognitive skill which helps practitioners engage the profound ambiguities present within the contexts of complexity is *dialectical thinking* (Basseches, 1984; Basseches, 2005).

Instead of a problem-solution orientation, Basseches (2005) advocates for approaches where the "organizing principle of dialectic integrate dimensions of contradiction, change and system transformation over time in a way that supports people's adaptation".

Basseches (2005) sees this as a way of "fostering integrative thinking" (p. 48) – where, "dialectical thinking as a psychological phenomenon is derived from a conception of a dialectical philosophical perspective" (p. 49), while the dialectical perspective is seen as one that shares a "common emphases on change, on wholeness, and on internal relations" (p. 50).

As a psychological cognitive theory that emphasizes wholeness and internal relations, dialectical thinking is well aligned with systems thinking.

Baseeches (2005) sees the "dialectical perspective as comprising a family of world outlooks, or views of the nature of existence (ontology) and knowledge (epistemology)", that, while recognized to be differing in many respects, "share

a family resemblance based on three features: common emphases on change, on wholeness, and on internal relations."

The key characteristics are outlined as per below:

Dialectical ontologies emphasize (1) that what is most fundamental in reality are some ongoing processes of change; (2) that in the course of these ongoing processes of change within existence as a whole, forms of organization emerge that have a coherence that cannot simply be accounted for by the nature of the parts that are organized within these forms (the forms are temporary and may disintegrate or give way to more complex forms of organization); (3) that everything that exists is in relationship to other things and that these relationships are internal to the nature of the things themselves-they are part of what makes the things what they are (and as a thing's internal relations change, its nature changes). (Baseeches 2005, p. 50)

While the key knowledge aspects are viewed as:

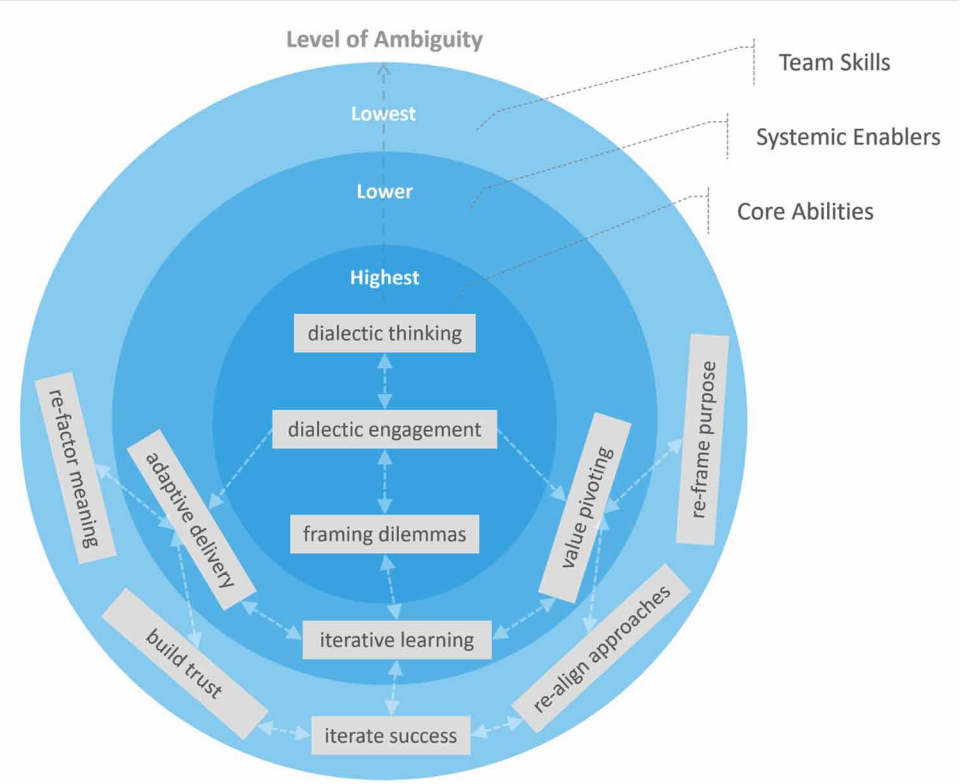
Similarly, dialectical epistemologies emphasize (1) that both individual and collective knowledge are essentially active processes of organizing and reorganizing understandings of phenomena; (2) that in these knowing processes there emerge individual and collective conceptual systems that give the knowledge a coherence that cannot simply be accounted for by the specific concepts, ideas, and facts organized within them; (3) that concepts, ideas, and fact exist in relationships not only to other concepts, ideas, and facts but also to the lives of the knowers who employ them. These relationships determine the meaning of the concepts, ideas, and facts, and as these relationships change, the meanings of concepts, ideas, and facts also change. (Baseeches 2005, p. 50)

Meta-Cognitive Abilities for Engaging Complexity

Leveraging dialectical thinking and the complex social challenges model yields a typology of cognitive resilience enablers for engaging complex challenges, as per Figure 8:

The model introduces three 'Core Abilities' for engaging complex social challenges – identified as the *dialectical thinking*, *dialectical engagement* and *framing dilemmas* (Matic, 2017) – that are outlined in further detail.

Figure 8. Cognitive resilience enablers



Dialectical Thinking

Based on its defined characteristics (Baseeches 2005, p. 50), 'dialectical thinking' is acknowledged the first meta-cognitive ability needed to successfully engage complex social challenges.

It enables a simultaneous 'holding' of seemingly contradictory ideas, allowing for their further resolution later in the process. It creates space for the sharing, consideration, and interaction of multiple perspectives, that might not seem initially aligned. It situates understanding in the lives of the participants as knowers within a shared complex context, emphasizing individual agency, experience, and creativity. It also introduces the notion of dialectics as a core affordance of design processes – one that is especially relevant in collective innovation settings.

Innovation designers, practitioners, and especially educators have an opportunity to further develop the practice of dialectical thinking – both within their teams, projects, work practices, and especially in the classroom.

Dialectical thinking extends the notions of 'critical thinking' in representing a whole-self creative practice – which mandates embodied and multi-faceted meta-cognitive approaches capable of engaging the systemic and trans-disciplinary realities of complex challenges.

In doing so, this meta-cognitive skill adds a 'missing link' to empower collective innovation initiatives in the contexts of complexity – making it possible to source the plethora of views and diversity of perspectives necessary for emerging group genious.

Dialectical thinking also represents the foundation for the second meta-cognitive ability – identified as *dialectic engagement*.

Dialectic Engagement

As a core meta-cognitive skill for enabling innovation in the contexts of complexity, 'dialectic engagement' extends the capabilities of 'dialectic thinking' by transposing them into the innovation space itself.

Dialectic engagement allows innovation teams, facilitators and practitioners to engage their groups and communities in a dialectical manner. This inverts many of the common expectations that have traditionally arisen around project and innovation management initiatives. It prioritizes questions over answers, and curiosity over understanding – realizing that, the latter will be the result of an emergent process.

Dialectical engagement allows innovation practitioners to design through asking questions while expressing a deep sense of curiosity and an orientation towards continuous learning – capable of honouring the unique perspectives of others and their situated creativity.

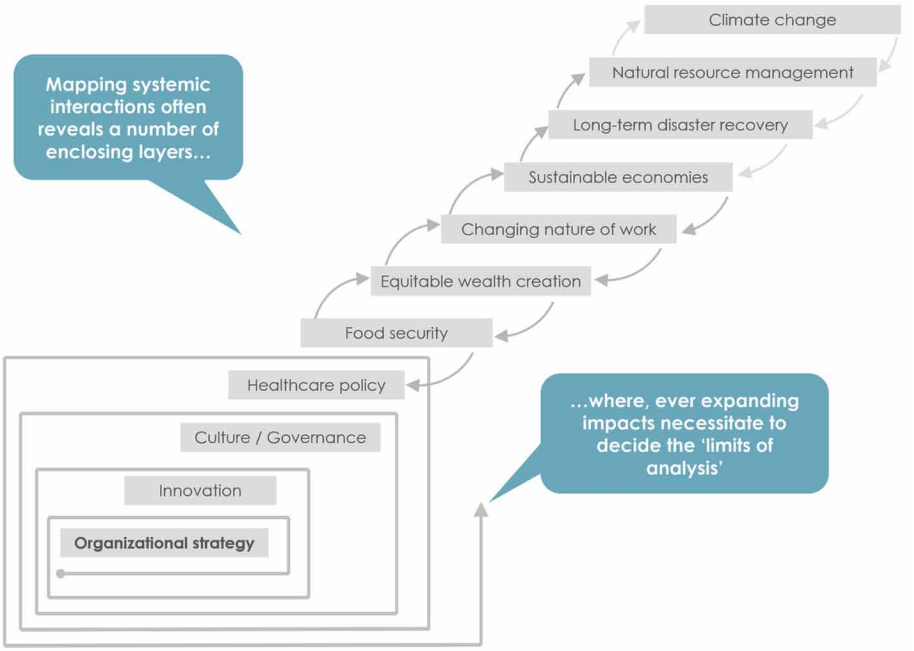
The Dialectic engagement approach allows for the emergence of possible 'solutions' throughout the innovation design process, as natural expressions of group creativity – while not committing to any idea in a preemptive fashion. Engagements are treated as exploratory and discovery opportunities, where the key goal is to learn from the deep insights and perspectives of others – and an opportunity to further appreciate the possible inferred boundaries within the existing complex challenge.

The question of defining 'problem boundaries' is of key importance in design processes – and especially to those involving collective innovation initiatives.

Due to the systemic nature of complex challenges, one core issue is the 'infinite embeddedness' phenomena. The more practitioners engage in a complex challenge, the more they are likely to find deep embeddedness of their original question in other systemic structures. In other words, the 'boundaries' of the problem definition change as we learn more about a given issue.

As an example, a seemingly simple goal of designing an organizational strategy might reveal degrees of embeddedness within other systemic boundaries – as per Figure 9:

Figure 9. Systemic boundaries and nested embeddedness in complex contexts



As a meta-cognitive skill, dialectic engagement enables the distribution of exploration, learning and understanding throughout the design process, among the diverse collective innovation participants – in such a way where it is possible to appreciate the variety of perspectives necessary to identify the most opportune boundaries of exploration.

The problem and opportunity boundaries are also likely to be identified at a variety of systemic scales. Some systemic impact boundaries might be identified at the 'micro' level – for instance, concerning the preparedness, readiness, roles, performance, or the transformation capacities of individuals or teams; or perhaps homeowners, families or public transportation users a public innovation context.

Another level of systemic boundaries might reveal phenomena at the 'mezzo' level – for example, concerning the behaviours of organizational departments, community neighbourhoods, cities, trading hubs, or school systems.

The highest level of systemic boundaries in innovation processes can be identified at the 'macro' level – concerning the behaviour of phenomena such as market systems, education systems, countries, and global and planetary systems, including for instance the notions around resilient economies and sustainable food production.

Dialectic engagement helps to mediate collective learning across the various scales and boundaries identified by the emergent group genious in a way where the diverse points of view can be appreciated and synthesized into several key opportunity areas.

This presents a foundation for the *framing dilemmas* – the last meta-cognitive skill.

Framing Dilemmas

Once the *dialectic thinking* has made it possible to gain access to the diversity of perspectives necessary for emerging group genious, and the *dialectic engagement* has enabled the exploration of the rich variety of views to enumerate key challenges and opportunities throughout the systemic scales in a way that makes it possible to identify key areas of action, it becomes possible to *frame* a complex challenge.

As a meta-cognitive ability, *framing dilemmas* enables practitioners to aggregate previous learning, exploration, and the identification of opportunity boundaries in a way where the seemingly contradictory forces are presented as *design tensions*.

Instead of forcing a resolution of a seemingly contradictory perspectives, a design tensions approach aggregates previous learning by converging onto a set of generative challenge and opportunity guidelines.

In this sense, design tensions describe the core dynamics of collective innovation processes – by representing the 'inner workings' of the dilemmas active within a given complex challenge context. Design tensions describe the boundaries of areas where the innovation design may expand to, and where it may not. They also encapsulate the general opportunity spaces where the 'framing' may occur, to inform the subsequent innovation efforts.

In many ways, this is the most critical point in collective innovation initiatives – as it impacts and defines nearly all subsequent activities within the design process.

As such, framing dilemmas is a highly creative process that requires an imperfect reconciliation of the active and dynamically changing design tensions in such a way where it minimizes the challenges while maximizing the opportunities for all the innovation stakeholders and participants involved.

Distinct opportunities exist for educators, practitioners and researchers alike in framing their curricula, innovation practices and research programmes towards enabling *systemic design* and *dialectical thinking* skills – whether in the classroom, the boardroom, the project 'war-room', or the innovation design studio.

The extent to which it is possible to enable dialectical meta-cognitive abilities in our teams, groups, classes, organizations, and communities correlates to the effectiveness of engaging collective innovation patterns – capable of inflecting the exigent challenges of our age towards the thriving, sustainable and resilient futures.

CONCLUSION

Collective innovation – and its constituent enabler, collective intelligence – hold a promise for addressing some of the most exigent organizational and social challenges of our time. To be successful, collective innovation needs to successfully engage the rich diversity of perspectives and plurality of views as a field of potentiality that exists in our groups and communities.

To succeed in enabling participatory engagement, collective innovation initiatives can benefit from specific meta-cognitive abilities that are dialectical in nature and can enhance implementation efforts rooted in systemic design methods and pattern language approaches.

This can help manage the pervasive asymmetries and intrinsic ambiguities situated within the contexts of complex social challenges – to enable innovation efforts capable of empowering thriving, resilient and sustainable futures for our organizations and societies on a global scale.

REFERENCES

Ackoff, R. L. (1981). The Art and Science of Mess Management. *INFORMS Journal on Applied Analytics*, *11*(1), 20–26. doi:10.1287/inte.11.1.20

Ackoff, R. L. (1999). Disciplines, the two cultures, and the scianities. *Systems Research and Behavioral Science*, *16*(6), 533–537. doi:10.1002/(SICI)1099-1743(199911/12)16:6<533::AID-SRES302>3.0.CO;2-R

Alexander, C. (1977). *A Pattern Language: Towns, Buildings, Construction*. Oxford University Press.

Alexander, C., & Alexander, P. (1979). The Timeless Way of Building. Oxford University Press.

Alexy, O., & Reitzig, M. (2013). Private–collective innovation, competition, and firms' counterintuitive appropriation strategies. *Research Policy*, *42*(4), 895–913. doi:10.1016/j.respol.2013.01.004

Basseches, M. (1984). *Dialectical Thinking and Adult Development*. Ablex Publishing Corporation.

Basseches, M.(2005). *The Development of Dialectical Thinking As An Approach to Integration*. Academic Press.

Berthet, E. T., & Hickey, G. M. (2018). Organizing collective innovation in support of sustainable agro-ecosystems: The role of network management. *Agricultural Systems*, *165*, 44–54. doi:10.1016/j.agsy.2018.05.016

Camillus, J. C. (2008). Strategy as a Wicked Problem. *Harvard Business Review*. https://hbr.org/2008/05/strategy-as-a-wicked-problem

Dater, A., & Merton, L. (Dirs.). (2008). *Taking Root – The Vision of Wangari Maathai.* Marlboro.

Dervin, B. (1998). Sense-making theory and practice: An overview of user interests in knowledge seeking and use. *Journal of Knowledge Management*, *2*(2), 36–46. doi:10.1108/13673279810249369

Harvard, T. H. Chan School of Public Health D-Lab. (2021). *Whole Life: Designing Life After Covid-19.* Retrieved via https://www.hsph.harvard.edu/d-lab/designing-life-after-covid-19/

Hill, L. A., Brandeau, G., Truelove, E., & Lineback, K. (2014). *Collective Genius: The Art and Practice of Leading Innovation*. Harvard Business Review Press.

Hogan, M., Harney, O., & Broome, B. (2015). Catalyzing collaborative learning and collective action for positive social change through systems science education. In *The Routledge International Handbook of Research on Teaching Thinking*. Routledge.

Hogan, M., Harney, O., Moroney, M., Hanlon, M., Khoo, S.-M., Hall, T., Pilch, M., Pereira, B., Lente, E. V., Hogan, V., O'Reilly, J., Groarke, J., Razzante, R., Durand, H., & Broome, B. (2020). A group dynamics framework for 21st century collective intelligence facilitators. *Systems Research and Behavioral Science*. Advance online publication. doi:10.1002res.2688

Jones, P. H. (2014). Systemic Design Principles for Complex Social Systems. In G. S. Metcalf (Ed.), *Social Systems and Design* (pp. 91–128). Springer Japan., doi:10.1007/978-4-431-54478-4_4

Khatib, F., & DiMaio, F. (2011). *Crystal structure of a monomeric retroviral protease solved by protein folding game players*. Retrieved via https://www.nature.com/nsmb/journal/v18/n10/full/nsmb.2119.html

Maathai, W. (2006). *The Green Belt Movement*. Lantern Books.

Maathai, W. (2010). *Replenishing the Earth*. Doubleday.

Matic, A. (2016). *Microwork: Theory, Models and Mechanics for enabling impact through aggregate action*. OCAD University. http://openresearch.ocadu.ca/id/eprint/1533/

Matic, G. (2017). *Collaboration for Complexity – Team Competencies for Engaging Complex Social Challenges*. OCAD University. http://openresearch.ocadu.ca/id/eprint/1990/

Matic, G. (2020). Collaboration Competencies for Complex Social Challenges. *Proceedings of Relating Systems Thinking and Design (RSD9) 2020 Symposium*.

Merskin, D. L. (2020). *The Sage International Encyclopedia of Mass Media and Society*. SAGE. doi:10.4135/9781483375519

Muthukrishna, M., & Henrich, J. (2016). Innovation in the collective brain. *Philosophical Transactions of the Royal Society B: Biological Sciences, 371*(1690). doi:10.1098/rstb.2015.0192

Peckham, M. (2011). *Time Magazine: Foldit Gamers Solve AIDS Puzzle That Baffled Scientists for a Decade*. Retrieved via https://techland.time.com/2011/09/19/foldit-gamers-solve-aids-puzzle-that-baffled-scientists-for-decade/

Slawsby, A., Alex, D., & Rivera, C. (2007). *Collective innovation* [Thesis]. Massachusetts Institute of Technology. https://dspace.mit.edu/handle/1721.1/39518

Tovey, M. (2008). *Collective Intelligence: Creating a Prosperous World at Peace*. Earth Intelligence Network.

Wang, K. (2013). Collective innovation: A literature review. *2013 Proceedings of PICMET'13: Technology Management in the IT-Driven Services (PICMET)*, 608–615.

Whitney, P., & Nogueira, A. (2020). Cutting Cubes Out of Fog: The Whole View of Design. Tongji University and Tongji University Press.

Woolley, A. W., Aggarwal, I., & Malone, T. W. (2015). Collective Intelligence and Group Performance. *Current Directions in Psychological Science*, *24*(6), 420–424. doi:10.1177/0963721415599543

Chapter 5
Entrepreneurship Innovation

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ABSTRACT

The global COVID-19 pandemic has created opportunities for the emergence of new entrepreneurial innovations. This has resulted in many individuals being left with no choice but to pursue entrepreneurial ventures because they have either lost their jobs, or breadwinners have succumbed to the virus. The objective of this chapter is to outline the entrepreneurial mindset in detail and how shifts are required to cope with today's uncertain times. An analysis of current extant literature was explored, and cogent findings were used to develop a theoretical framework for entrepreneurial innovation in a post-pandemic society. The literature in this chapter indicated the need for understanding the impact of the current global pandemic on entrepreneurial innovation in order to provide recommendations for policymakers that can stimulate creativity, innovation, and better education in the post-pandemic era.

INTRODUCTION

The global COVID-19 pandemic has created opportunities for the emergence of new entrepreneurial innovations. This has resulted in many individuals being left with no choice but to pursue entrepreneurial ventures because they have either lost their jobs, or breadwinners have succumbed to the virus. The objective of this chapter is to outline the entrepreneurial mindset in detail and how shifts are required to

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cope with today's uncertain times. An analysis of current extant literature will be explored and cogent findings will be used to develop a theoretical framework for entrepreneurial innovation in a post-pandemic society. The literature in this chapter indicated the need for understanding the impact of the current global pandemic on entrepreneurial innovation in order to provide recommendations for policymakers that can stimulate creativity, innovation and better education in the post-pandemic era.

Background and Importance

Entrepreneurship can be defined as "the pursuit of opportunity beyond the resources you currently control" (Stevenson 2000:1). According to González-Cruz and Devece (2018), the entrepreneurial mindset is the cornerstone of the process of value creation, regardless of whether this value creation occurs in the economic, social or environmental domains. Bearing this in mind, pandemics can impact on the economic and social domains, whilst climate change can influence the environmental domain of the entrepreneurial mindset.

Furthermore, it is worth taking into account the Bacigalupo et al.'s (2016) EntreComp theoretical framework, which identifies three main competency areas that constitute the entrepreneurial mindset.

Entrepreneurial action is increasingly seen in the context of sustainability, namely as a promising way to conserve ecosystems, counteract climate change, reduce environmental degradation and maintain biodiversity (Lans et al., 2018; Shepherd & Patzelt, 2011). Therefore, the impact of the current global pandemic on entrepreneurial innovation must be explored further to establish how approaches relating to the main competency areas have shifted or have been disrupted.

There are three approaches to literature on innovation studies related to the production of technical advances. First, the National Innovation System or National Innovation Systems (NIS) approach was created by Freeman (1987) to describe innovation practices within a network of public and private sector organizations. The research undertaken by Freeman (1987) then provided the theoretical basis for innovation systems literature by other seminal authors such as Lundvall (1992), Nelson (1993) and Edquist (1997). Thereafter, the second NIS approach evolved from their current literature, and took into account the need for emerging countries and economies to absorb and adapt technology from more industrialized countries and economies (Lall & Pietrobelli, 2002).

Finally, the third approach aims to extend NIS viewpoints by taking into account development and underdevelopment problems. This approach aims to bridge the divide that could arise between the complexities of the innovation environment and economic growth by focusing on the determinants of innovative, learning and capacity building practices in the development process (Lundvall, Johnson, Andersen & Dalum,

2002). According to Godin (2009), the two drawbacks of the NIS methodology are that it has very little practical value as well as a lack of substance; and current qualitative and quantitative metrics were not sufficient methods for evaluating the definition. In comparison, Godin (2009) suggests that the NIS paradigm puts so much focus on national structures and economic development, but does not offer any insight into the dissemination of information itself. In order to address these limits, Castellacci and Natera (2015) have established six dimensions of the NIS, spanning the techno-economic and socio-institutional domains.

Entrepreneurial ecosystems related to the dimensions of NIS are still changing due in part to the global pandemic of COVID-19, and Autio et al. (2014) indicates that creative mechanisms initiated by active entrepreneurship are forcing improvements in local environments and societies to generate fiscal, social and environmental impacts. It has been found that the actions of entrepreneurs lead to the development of an environment that promotes much more entrepreneurship and even creates a positive feedback loop (Kenney & Florida, 2000). Furthermore, Elkington (1994) conceived the concept of "The Triple Bottom Line" balancing the company's social, environmental and economic impact. This construct indicates that corporations need to have socially and environmental responsible behaviour that can be positively balanced with its economic goals. In light of this, the next few sections will present the impact of entrepreneurial innovation on these three domains.

Impact of Covid-19 on Entrepreneurial Judgement

The first aspect is judgement, which relates to the opportunity to discover early openings in markets where consumer desires are continually evolving (Kirzner, 1997). According to González-Cruz and Devece (2018), these needs can be overt or implicit, and customers may often be ignorant of their actual needs; thus, the entrepreneur is the one who must envision and design a value proposition to satisfy these needs. Entrepreneurial discovery is therefore a result of imagination that involves innovation and awareness, particularly during a global pandemic in which consumer needs are in total disarray.

Economic Domain

According to Murzina et al. (2020), entrepreneurial judgement and risk-taking are critical to entrepreneurial performance. The authors contend that entrepreneurs have different expectations for risk and prediction and that their choices reflect these preferences. Entrepreneurial judgments are tied to the choices taken by top management about strategic emphases as an essential component of the performance of companies (Wang et al., 2020).

External enablers for aggregate-level situations—such as regulatory developments, technical breakthroughs, and demographic shifts—that may impact a multitude of new venture-building attempts by a range of different actors. External enablers are required to build space for new economic initiatives, but cannot guarantee sustainability for individual projects that are launched in response to their occurrence. Nor do they need to be constructive overall for the economy (Davidsson, 2015).

Social Domain

COVID-19's focus has been on vulnerability and potential for creativity in our socio-cultural environments. Fear of pollution has divided people all over the world, and surprisingly creative ways of communicating and working together have arisen. For example, businesses that have avoided working from home for years have changed their practices over the weekend. They are now finding that people are working more productively without the daily disruptions pervasive in office life. They also save travel and hotel expenses. Many companies now feel the need to revisit their leadership and competency structures, when their beliefs about home employment, empowerment, trust and teamwork are profoundly questioned (Olivier et al., 2020).

The twentieth century's focus on freedom of speech and civil rights, overlaid by social media in the twenty-first century, has had a major influence on organizations as an environment. Individual views and ideas are now easily articulated within organizations through social media channels and corporate intranets such as Facebook, Microsoft Teams or Yammer. As these views are expressed and resonate with many others, they often create surprising social movements or pockets of energy for certain ideas or projects. They often encourage leaders to keep a more precise finger on the pulse of the corporate environment or mood (Olivier et al., 2020).

Environmental Domain

According to Rindova and Courtney (2020), despite long-standing recognition of the importance of uncertainty in the strategy, strategy researchers have paid limited attention to the distinct challenges and processes involved in the strategy under uncertainty. The authors argue that strategists adopt two distinct strategic positions when developing strategies in uncertain markets—shaping and adapting (Rindova & Courtney, 2020).

Present approaches to entrepreneurship—discovery, development, empowerment, judgment, and actualization—seem contradictory in their explanations of entrepreneurial competence. Their disagreement derives from their divergent views on the idea of potential, which does not offer a reason for the issue of ambiguity. Indeed, facing confusion without a reliable reference point for entrepreneurial

assessment is tantamount to a gamble. Pure chance and not ability will be the core of entrepreneurial competence (Gimenez Roche & Calcei, 2020). Covid-19, for example, acted as an external enabler of market demand necessary for the success of certain types of ventures and helped others by eliminating competitive forces. It is also interesting to note that, while external enablers have a direct impact on venture creation, they can only have an indirect impact on venture success.

Impact of Covid-19 on Entrepreneurial Knowledge and Experience

The second element relates to knowledge and experience, which allows an entrepreneur to recognize consumer needs in ways that other more powerful market players are unable to meet (Hill & Birkinshaw, 2010). A study by Clausen (2020) illustrates this competence by arguing that entrepreneurs need to reach out to external enablers, such as potential customers and suppliers, to test, implement and deliver an offer for sale in a specific context.

Economic Domain

According to Širec and Vrečko (2020), the economic crisis, and consequently the business crisis of companies that are and will continue to be the result of the COVID-19 virus, poses unprecedented challenges to the workforce and to the organization and management of companies. Unemployment will rise, and young people will again be among the most affected by the crisis, similar to previous crises. At the same time, it is expected that during the crisis period, companies will try to make up for lost time and overcome the crisis as quickly as possible, so that they will be more efficient and agile than usual, decide on the right projects and implement them effectively in the context of the new realities.

Professionalism and the ability to work in an entrepreneurial and project-related manner as an individual's increased competence will be particularly relevant to the labor market demand. These skills, acquired through various forms of non-formal and even more formal training, will be an important asset and opportunity for those young people who will develop and acquire them and who are willing and able to practice them through their agile entrepreneurial and project-related creativity (Širec & Vrečko, 2020).

Social Domain

Shepherd and Williams (2020) argue that, in particular, we theorize that entrepreneurial action plays the role of a balancing mechanism when adversity is an event, such as

an earthquake that kills thousands of people and hurts many more, business failure, and perhaps the Covid-19 pandemic, and plays the role of a balancing mechanism when adversity is a persistent state, such as during periods of extended lockdown.

According to Crick and Crick (2020), co-opting techniques include businesses exchanging capital (e.g. facilities and funds) and skills (e.g. expertise and experience) for mutually beneficial outcomes. In particular, when addressing network relationships more generally than co-opting, Ritter, Wilkinson, & Johnston (2002) states that the ability to successfully engage with network connections is a key skill of the firm, adding that has a significant impact on the firm's competitive strength and efficiency. As a result, there are certain drawbacks associated with these inter-company operations, ranging from not being handled successfully, from conflicts to tensions.

At present, according to Araki and Cotellessa (2020), a great deal of future polymath capacity lies dormant and untapped. This truth is often apparent in most industries and government organizations: issues that, by any chance, fall through a void between divisions or cross-departments that do not normally function together may have no responsibility for them, and they seem to be surprisingly difficult to address in this kind of structure—even if they are easy problems.

In comparison, a very unfortunate facet of the over-simplistic divide of "health vs economy" is a prime example in the COVID-19 crisis debate. Again, this negative approach places society as a whole in a more precarious role by moving individuals away from potentially beneficial interactions that might emerge from new synthesis, variations, or incorporation (Araki & Cotellessa, 2020). Given the importance of the polymathic approach, and given that this value is not understood by dominant models that are actually driving actions and generating rewards in society, there is an immediate need to shift the trend of those social behaviors and assumptions that are so entangled with our way of perceiving, seeing and feeling the world. In other words, it is important to create an atmosphere that is more favorable to science and cultural progress focused on the foundations of depth, breadth and integration (Araki & Cotellessa, 2020).

Environmental Domain

Statistics suggest that the building industry uses more than 34% of natural resources and is a significant cause of CO2 emissions, pollution and climate change. Buildings are known to be the primary causes of environmental issues such as energy savings, recycling and climate change (Chiang et al., 2014). A recent idea of "Green Buildings" has been introduced in the architecture sector around the world as part of the environmental movement. Robichaud and Anantatmula (2011) identified green building as an integration of environmental concerns in all phases of construction. This ensures that all facets of construction, water and energy conservation, building

materials and natural resources, housekeeping and environmental effects should be taken into account (Robichaud & Anantatmula, 2011).

The philosophy of green building, or in other words sustainable construction, has originated from the concept of sustainable growth, which is focused on sustainable management with an emphasis on management practices, prudent use of capital and sustainable design (Opoku et al., 2019). Environmental sustainability in building projects can be understood and ensured by a variety of drivers, including: government policy and legislation, builder methodology, consumer needs, comparative advantages, government positions, benefits for green construction and the usage of social networks (Bragança, Agyekum & Ayarkwa, 2019).

Impact of Covid-19 on Entrepreneurial Decision Making

The final element is decision-making, which relates to dealing with uncertainty, ambiguity and risk; and having enough resilience to learn from experimentation through trial and error (Bacigalupo et al., 2016). According to Edeh et al. (2020), firm resilience is concerned with the organizational capacity to foresee external disruptions by reconfiguring all the structures to meet the new order. Any of these external disruptions include the emergence of the COVID-19 pandemic and the advent of economic crisises. As a consequence, entrepreneurial decision-making leads to firm stability because it capitalizes on corporate capabilities to resolve crises, obstacles, complexities and facilitates ongoing learning to support future decisions.

Economic Domain

According to Filser et al. (2020), there are two schools of thinking on entrepreneurship opportunities. The first goes back to the work of Kirzner (1997). In this view, prospects arise objectively on the market, independently of the entrepreneur. Rather, it is the job of the entrepreneur to locate and maximize these opportunities. In the other hand, the opportunity-creation school, which is based on Schumpeter's (1942) conceptualization, sees opportunities as arbitrary constructions implemented by the entrepreneur. Hence, opportunities do not already exist but rather are made.

These opinions do not actually have to be viewed as opposing. Rather, they discuss two different business conditions and, consequently, two different forms of entrepreneurs. Although Kirzner's entrepreneur is an arbitrator that balances out misallocations of wealth and price disparities, Schumpeter's entrepreneur is a progressive innovator adding imbalance or disruption to the sector (Shane 2003). In other words, while both conceptualizations have their merits and Schumpeter's courageous entrepreneur is possibly more attractive to both entrepreneurs and scholars, Kirzner's entrepreneur is much more popular in reality.

Both private sector companies have the primary goal of making a profit. They also have other goals, but if their primary goal is not reached, they will sooner or later cease to work. Profit maximization, whether specified as the primary goal or not, is necessary for all commercial organizations; without profit, they simply get out of business. In recent years, it has become apparent that some practices that lead to environmental protection may also have substantial short-and long-term economic benefits (Legrand et al., 2020).

Cutting expenses by implementing energy-efficient and water-efficient systems, using energy-efficient appliances and maintaining efficient and equitable hiring policies will improve internal profitability. Additional business gains from better relationships with customers, improved employee productivity and enthusiasm, enhanced public credibility, expanded market share will come from sustainable management systems (Legrand et al., 2020).

Moreover, leaders have to make tough decisions! Some hang on to previous performance recipes to maintain and protect their company from intruders misaligned with 'the way we do it around here.' Other leaders can consider new ideas with geniune curiosity and intelligence, explore the importance of the imaginary cells and encourage them to cluster and cluster. They track their progress, and when the time is right, they have the confidence to release the past and follow a new path (Olivier et al., 2020).

This is also true of individual entrepreneurs. They also need to be open to questioning their own expectations and values in order to understand, evolve and innovate. Fear, ignorance and lack of interest are preventing them from truly understanding. For some entrepreneurs, "Business" is a perfect way to stop asking themselves hard questions that might lead to unlocking entrepreneurial innovations. (Olivier et al., 2020)

Social Domain

The social factor is concerned with the effect that the company has on the community in which it works. The primary concern of the social component is how entrpreneurs can make a meaningful contribution to the life of local residents both now and in the future. A organization committed to sustainability would also resolve concerns such as environmental health, social welfare, human rights, workplace rights, economic issues, equal opportunity, training and schooling, protection at work and working conditions. It must also preserve and encourage social and cultural diversity, engage groups, inform stakeholders and the public, and educate personnel on sustainable practices (Legrand et al., 2020).

Environmental Domain

The environmental dimension reflects on the effect of the company on flora and fauna that make up ecosystems, in addition to the air we breathe, the water we drink and the land we enjoy. It includes looking at the environmental impact of a business in terms of both its production, equipment and finished goods. Consequently, both pollution and the removal of pollutants must be discussed in depth. Maximizing production and performance of both goods and services must be sought. The overarching goal is to eliminate any activities that may negatively impact the enjoyment of the planet's riches by current and future generations. The key goals of this dimension are to prevent short-and long-term environmental degradation and to protect and encourage ecological diversity (Legrand et al., 2020).

RECOMMENDATIONS

The recommendations provided are based on examples of creativity, innovation and better education being provided to empower entrepreneurs to best deal with the devasting COVID-19 pandemic.

Creativity

Awareness of other entrepreneurs has a positive effect on the capacity for creativity, since entrepreneurial connections have the ability not only to stimulate new innovations, but also to promote the imaginative combination of innovative ideas. For example, in an industry as globalized as tourism, it may be interesting to build and sustain strong international networks, as they have recently been shown to be a decisive factor in improving the export success of entrepreneurs (Montañés-Del-Río & Medina-Garrido, 2020).

According to Bresciani and Eppler (2020), Idea creation may be dynamically visualized with machine thought diagrams, imaginative and/or representational hand drawings and innovative models. The idea creation process is the first step in achieving positive change, in which an entrepreneur creates a creative solution for addressing a social problem that can be a product (or service) as well as a way to strengthen the system. The prerequisite for finding a solution is to thoroughly and profoundly understand the problem. In view of the co-evolution of the solution and the problem of space (Dorst & Cross, 2001), this first step includes two tightly interlinked objectives: understanding the problem and finding creative solutions.

Innovation

Entrepreneurial Innovation can be demonstrated by the idea of using vertical space to plant cash crops in a regulated climate, providing a realistic solution to the problems facing conventional farming as a result of the COVID-19 pandemic. Emerging technology originally designed to help industrial sectors (e.g. to drive industry 4.0) are now being leveraged to drive advances in vertical indoor farming (Jassem & Razzak, 2020). Such agricultural ventures not only increase the yield of crops per acre, but also produce goods in near proximity to the centers of demand, thus reducing the cost of fresh food. In addition, these crops are grown in areas where they are free from pests and weeds, which ensures that they are free from toxic pesticides, keeping products safe for human use (Jassem & Razzak, 2020).

Most of the vertical in-door farming ventures around the world were initially guided by major developers with access to considerable resources. Entrepreneurs who do not have access to such resources find it daunting to move into vertical farming. However, with the emergence of recent technology breakthroughs, it is now becoming possible for developers to set up those ventures in smaller spaces with considerably less start-up money. However, there are also many barriers that need to be tackled by public policymakers and city planners. These hurdles are primarily linked to access to finance and lack of opportunities for technology transfer (Jassem & Razzak, 2020).

Better Education

Finally, smart cities are referred to as smart people. This is a total change in the viewpoint of an overview of a city where human capital, which are "systemic and collective intelligence" (Anttiroiko, 2016), are valued as commodities. In this scenario, the smart city is viewed from a bottom-up viewpoint, with a very citizen-centric approach. In this iteration of smart cities, networking and automated networks are a mechanism that facilitates the development of people. Better educated people build a better urban climate where citizens use connections and knowledge to engage in decision-making, providing a space for cooperation and bottom-up developments.

According to Calzada and Cobo (2015), smart use of knowledge can improve openness, accountability, engagement and cooperation. Therefore, entrepreneurial innovation plays a vital role in education, where communities want quality education and thus spend resources and time in creative infrastructure for younger generations; however, emphasis can not be based exclusively on the rate of Internet adoption, but on the right to select whether to be linked—in other words, to have a critical position about when, how, and when people are connected (Calzada and Cobo, 2015). Subsequently, the accuracy of the knowledge given is essential to getting

better educated people, but it can prove to be the greatest obstacle of attempting to provide smart citizens. Smart people are not simply those who are better educated, but those who are more capable of discerning and acting on the accuracy of the information presented (Sayún, 2020).

FUTURE AREAS OF RESEARCH

This chapter explored entrepreneurial innovation within the context of the new normal brought about by the current COVID-19 pandemic. Further research may be conducted by looking further than the scope of just the economic, social and environmental domains that were investigated in this research. These domains could also be objective evaluated through the use of quantitative methods in future studies to create key metrics around entrepreneurial innovation that are generalisable and benchmarkable.

CONCLUSION

This chapter highlighted the three most important domains associated with "The Triple Bottom Line" and provided evidence on the impact that entrepreneurial innovations can have on these three core domains. The three main competency areas for entrepreneurial innovation were identified and explained in the context of the COVID-19 global pandemic. This chapter focused on highlighting the impact of the current global pandemic and it was found that all three domains (economic, social and environmental) have experienced shifts in entrepreneurial mindset that have stimulated creativity, innovation and better education amongst entrepreneurs. Therefore, policymakers need to be just as mindful to create conducive environments that stimulate even further entrepreneurial innovations that can re-energize the global economy and start addressing the economic, social and environmental downturns brought about by the COVID-19 global pandemic.

REFERENCES

Anttiroiko, A. V. (2016). City-as-a-platform: The rise of participatory innovation platforms in Finnish cities. *Sustainability*, *8*(9), 922. doi:10.3390u8090922

Autio, E., Kenney, M., Mustar, P., Siegel, D., & Wright, M. (2014). Entrepreneurial innovation: The importance of context. *Research Policy*, *43*(7), 1097–1108. doi:10.1016/j.respol.2014.01.015

Bacigalupo, M., Kampylis, P., Punie, Y., & Van den Brande, G. (2016). EntreComp: The entrepreneurship competence framework. *Luxembourg*. *Publication Office of the European Union*, *10*, 593884.

Bragança, L., Vieira, S. M., & Andrade, J. B. (2014). Early stage design decisions: The way to achieve sustainable buildings at lower costs. *TheScientificWorldJournal*, *2014*, 2014. doi:10.1155/2014/365364 PMID:24578630

Calzada, I., & Cobo, C. (2015). Unplugging: Deconstructing the smart city. *Journal of Urban Technology*, *22*(1), 23–43. doi:10.1080/10630732.2014.971535

Castellacci, F., & Natera, J. M. (2015). The convergence paradox: the global evolution of national innovation systems. The handbook of global science, technology, and innovation, 15-45.

Chiang, Y. H., Zhou, L., Li, J., Lam, P. T. I., & Wong, K. W. (2014). Achieving sustainable building maintenance through optimizing life-cycle carbon, cost, and labor: Case in Hong Kong. *Journal of Construction Engineering and Management*, *140*(3), 05014001. doi:10.1061/(ASCE)CO.1943-7862.0000823

Clausen, T. H. (2020). Entrepreneurial thinking and action in opportunity development: A conceptual process model. *International Small Business Journal*, *38*(1), 21–40. doi:10.1177/0266242619872883

Crick, J. M., & Crick, D. (2020). Coopetition and COVID-19: Collaborative business-to-business marketing strategies in a pandemic crisis. *Industrial Marketing Management*, *88*, 206–213. doi:10.1016/j.indmarman.2020.05.016

Davidsson, P. (2015). Entrepreneurial opportunities and the entrepreneurship nexus: A re-conceptualization. *Journal of Business Venturing*, *30*(5), 674–695. doi:10.1016/j.jbusvent.2015.01.002

Dorst, K., & Cross, N. (2001). Creativity in the design process: Co-evolution of problem–solution. *Design Studies*, *22*(5), 425–437. doi:10.1016/S0142-694X(01)00009-6

Edeh, F. O., Joseph, O. A., Alamina, U. P., Osueke, N. C., & Onyemaechi, U. (2020). Entrepreneurial Innovation: A Resilience Strategy. *Sri Lankan Journal of Entrepreneurship*, *2*(1), 161–180.

Edquist, C. (Ed.). (1997). *Systems of innovation: Technologies, institutions and organizations*. Thomson Learning.

Elkington, J. (1994). Towards the sustainable corporation: Win-win-win business strategies for sustainable development. *California Management Review*, *36*(2), 90–100. doi:10.2307/41165746

Freeman, R., Freeman, C., & Freeman, S. (1987). *Technology, policy, and economic performance: lessons from Japan*. Burns & Oates.

Giménez RocheG.CalceiD. (2020). Bypassing Uncertainty: Externally Enabled Routines and Entrepreneurial Judgment. Available at SSRN 3646972. doi:10.2139/ssrn.3646972

Godin, B. (2009). National innovation system: The system approach in historical perspective. *Science, Technology & Human Values*, *34*(4), 476–501. doi:10.1177/0162243908329187

González-Cruz, T., & Devece, C. (2018). Entrepreneurial innovation, judgment, and decision-making as a virtuous process. *The International Entrepreneurship and Management Journal*, *14*(2), 245–248. doi:10.100711365-018-0510-y

Hill, S. A., & Birkinshaw, J. M. (2010). Idea sets: Conceptualizing and measuring a new unit of analysis in entrepreneurship research. *Organizational Research Methods*, *13*(1), 85–113. doi:10.1177/1094428109337542

Jassem, S., & Razzak, M. R. (2020). Entrepreneurship in Urban Jungles through High-Tech Vertical Farming. In *Entrepreneurship*. IntechOpen.

Kenney, R. F. M., & Florida, R. (2000). Silicon Valley and Route 128 won't save us. *California Management Review*, *33*(1), 68–88.

Kirzner, I. M. (1997). Entrepreneurial discovery and the competitive market process: An Austrian approach. *Journal of Economic Literature*, *35*(1), 60–85.

Lall, S., & Pietrobell, C. (2002). *Failing to compete*. Edward Elgar Publishing. doi:10.4337/9781781950579

Lans, T., Baggen, Y., & Ploum, L. J. L. (2018). Towards more synergy in entrepreneurial competence research in entrepreneurship education. In *A research agenda for entrepreneurship education* (pp. 224–242). Edward Elgar Publishing. doi:10.4337/9781786432919.00018

Legrand, W., Gardetti, M. Á., Nielsen, R. S., Johnson, C., & Ergul, M. (2020). *Social Entrepreneurship in Hospitality: Principles and Strategies for Change*. Routledge. doi:10.4324/9781315187365

Lundvall, B.-Å. (Ed.). (1992). *National systems of innovation: Towards a theory of innovation and interactive learning*. Pinter Publishers.

Lundvall, B. Å., Johnson, B., Andersen, E. S., & Dalum, B. (2002). National systems of production, innovation and competence building. *Research Policy*, *31*(2), 213–231. doi:10.1016/S0048-7333(01)00137-8

Montañés-Del-Río, M. Á., & Medina-Garrido, J. A. (2020). Determinants of the Propensity for Innovation among Entrepreneurs in the Tourism Industry. *Sustainability*, *12*(12), 5003. doi:10.3390u12125003

Nelson, R. R. (Ed.). (1993). *National innovation systems: A comparative analysis*. Oxford University Press.

Olivier, S., Hölscher, F., & Williams, C. (2020). *Agile Leadership for Turbulent Times: Integrating Your Ego, Eco and Intuitive Intelligence*. Routledge. doi:10.4324/9781003029595

Opoku, D.G.J., Agyekum, K., & Ayarkwa, J. (2019). Drivers of environmental sustainability of construction projects: a thematic analysis of verbatim comments from built environment consultants. *International Journal of Construction Management*, 1-9.

Ramoglou, S. (2021). Knowable opportunities in an unknowable future? On the epistemological paradoxes of entrepreneurship theory. *Journal of Business Venturing*, *36*(2), 106090. doi:10.1016/j.jbusvent.2020.106090

Rindova, V., & Courtney, H. (2020). To Shape or Adapt: Knowledge Problems, Epistemologies, and Strategic Postures under Knightian Uncertainty. *Academy of Management Review*, *45*(4), 787–807. doi:10.5465/amr.2018.0291

Ritter, T., Wilkinson, I. F., & Johnston, W. J. (2002). Measuring network competence: Some international evidence. *Journal of Business and Industrial Marketing*, *17*(2/3), 119–138. doi:10.1108/08858620210419763

Robichaud, L. B., & Anantatmula, V. S. (2011). Greening project management practices for sustainable construction. *Journal of Management Engineering*, *27*(1), 48–57. doi:10.1061/(ASCE)ME.1943-5479.0000030

Sayún, M. (2020). *Decoding Smart Kalasatama: Design Research to Evaluate the Social Impact of a Smart City*. Academic Press.

Schumpeter, J. A. (1942). *Capitalism, socialism and democracy*. Routledge.

Shane, S. A. (2003). *A general theory of entrepreneurship: The individual-opportunity nexus*. Edward Elgar Publishing. doi:10.4337/9781781007990

Shepherd, D. A., & Patzelt, H. (2011). The new field of sustainable entrepreneurship: Studying entrepreneurial action linking "what is to be sustained" with "what is to be developed". *Entrepreneurship Theory and Practice*, *35*(1), 137–163. doi:10.1111/j.1540-6520.2010.00426.x

Shepherd, D. A., & Williams, T. (2020). Entrepreneurship responding to adversity: Equilibrating Adverse Events and Disequilibrating Persistent Adversity. *Organization Theory*, *1*(4), 2631787720967678. doi:10.1177/2631787720967678

Širec, K., & Vrečko, I. (2020, June). Synthesis of youth entrepreneurship and project management competencies for post COVID-19 challenges. In *Proceedings of FEB Zagreb International Odyssey Conference on Economics and Business* (*Vol. 2*, No. 1, pp. 684-695). University of Zagreb, Faculty of Economics and Business.

Stevenson, H. H. (2000). Why entrepreneurship has won. *Coleman White Paper, 2*(4), 483.

Wang, X., Dass, M., Arnett, D. B., & Yu, X. (2020). Understanding firms' relative strategic emphases: An entrepreneurial orientation explanation. *Industrial Marketing Management*, *84*, 151–164. doi:10.1016/j.indmarman.2019.06.009

Section 3
Education

Chapter 6
Stimulating Creativity and Innovation Through Apt Educational Policy

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ABSTRACT

The gap between expected and actual skillsets to drive workforce creativity and developing innovative products and services in recent times suggests the need for a thorough review of educational policy. The required level of creativity and innovation could be stimulated through educational policy review and effective implementation of action plans to meet expectations in the fourth industrial revolution. A literature review approach was adopted to examine the issues in current education system, as well as the emerging trends within the system to promote creative learning. The findings show that discipline-specific instructional strategies propelled by technological innovations (educational virtual reality games) are essential in stimulating creativity and innovation. Gamification in learning pedagogies not only promotes important academic learning but also builds the skills required for success in the 21st century.

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INTRODUCTION

Education is an ongoing process for knowledge acquisition and/or developing competencies, skills and abilities to meet the socio-economic objectives of a nation. It could be referred to as life-long learning activities for developing human capabilities through formal and informal learning methods. To address the skills deficiencies, there is a need for a proper review of educational policy to meet the skills requirements for creativity and innovation in the digital age. The reason is that lack of innovation can have dire implications for a Country's socio-economic progress. If education does not evolve, it stagnates and produces mediocre outcomes (Serdyukov, 2017). Hence, the educational policy must be continuously streamlined with creativity and innovation as its core elements.

The modus operandi of innovation always seeks to disrupt established patterns of doing things. It is expected that people and even some educational institutions may be displaying some form of resistance towards this innovation leading to disruptions. As rightly put by Levasseur (2012) "we like the fruits of innovation, but few of us have the mettle to run the gauntlet of innovation." People's and organisational needs continue to vary significantly over time but do the current educational system serve the need for creativity and innovation? Arguably, the current system of education in developing countries was not designed to stimulate creativity and innovation among learners. Rather, it was designed to develop theoretical knowledge or capabilities. Academic skills is no longer sufficient in promoting workforce creativity and developing innovative products and services in recent times. The ability to challenge the status quo and generate creative ideas are fundamental for eco-innovation to protect the planet (Fields & Atiku, 2017). Therefore, the policymakers and institutions of higher learning have roles to play in stimulating creativity and innovation for development. Interventions such as review of current educational policy, curriculum review, experiential learning, discipline-specific innovation policy development and implementation are critical in advancing creativity and innovation in developing countries. The main objective of this chapter is to analyse the need to stimulate creativity and innovation through apt educational policy.

BACKGROUND

From antecedent hitherto, the concept of creativity and innovation relates the processes involved in the creation and application of new knowledge and hence at the centre of knowledge management. There is a strong relationship between the two terms often renders a tandem usage in most cases (Sarooghi, Libaers, & Burkemper, 2015). The current dispensation is an effect of the innovations from the past, hence innovation

cannot be overlooked in the history of mankind and ultimately will play an even greater role in the future of the human race (Atiku & Lawal, 2021). While there has been increased interest in creativity in education, this has not always translated into practice. Traditional "drill" and "kill" approaches or standard-based teaching have often squeezed creativity out of the curriculum or areas of policy and assessment (Girourx & Schimdt, 2004). A large number of High School graduates are not ready for college (college preparedness 2012) and employers in turn are dissatisfied with college graduates (Thomson, 2015; Jaschik, 2015). This outcome is an indicator that the current educational systems may not be sufficiently innovative.

Today, though, one will be excused for not seeing much of a difference between the way we learn and how we did some twenty years ago (Crichton, 2015). Innovation is linked to creativity, risk-taking and experimentation which ought to be part of our educational system (Brewer & Tierney, 2012). Educational policy has been of critical concern to all countries on the planet, especially to developing countries in Africa as it has tendencies to mar or make economic fortunes of Nations. The United Nations which is arguable the most powerful Organisation on the planet in 2015 announced the 2030 Agenda for sustainable development with an action plan for people, the planet and prosperity. The Sustainable Development Goals (SDGs) comprises 17 development goals. Goal four (4) aims to "ensure inclusive and equitable quality education and to promote lifelong learning opportunities for all" and it has ten (10) ambitious targets (United Nations, 2015). Ultimately this goal cannot be attained if education remains static following a conventional approach (Atiku, & Anane-Simon, 2020; Atiku & Boateng, 2020). Therefore, stimulating creativity and innovation through educational policy development and implementation could be useful in ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all.

Issues in Current Educational Policy

The current educational policy which has garnered global concerted efforts towards its implementation is "Education for Sustainable Development". It is commonly understood as education that encourages changes in knowledge, skills, values and attitudes to enable a more sustainable and just society for all (Atiku & Lawal, 2021). Education for Sustainable Development (ESD) aims to empower and equip current and future generations to meet their needs using a balanced and integrated approach to the economic, social and environmental dimensions of sustainable development. The concept of ESD was born from the need for education to address the growing environmental challenges facing the planet. To do this, education must change to provide the knowledge, skills, values and attitudes that empower learners to contribute

to sustainable development. At the same time, education must be strengthened in all agendas, programmes and activities that promote sustainable development.

ESD is holistic, transformational and concerns learning content and outcomes, pedagogy and active learning environment (UNESCO, 2014). With regards to learning content such as curricula, the complex sustainability challenges facing societies cut across boundaries and multiple thematic areas. Education must therefore address issues such as climate change, poverty and sustainable production (Atiku, 2020). ESD promotes the integration of these critical sustainability issues in local and global contexts into the curriculum to prepare learners to understand and respond to the changing world. ESD aims to produce learning outcomes that include core competencies such as critical and systems thinking, collaborative decision making and taking responsibility for the present and future generations (Kioupi, & Voulvoulis, 2019). To deliver such diverse and evolving issues, ESD uses innovative pedagogy, encouraging teaching and learning in an interactive learner-centred way that enables exploratory, action-oriented and transformative learning. Learners are enabled to think critically and systematically develop values and attitudes for a sustainable future. Since traditional single-directional delivery of knowledge is no longer sufficient to inspire learners to take action as responsible citizens. ESD involves rethinking the learning environment, physical and virtual.

ESD is not confined to schools but can be applied to all levels of formal, informal and non-formal as an integral part of lifelong learning. The learning environment itself must adapt and apply a whole institution approach to embed the philosophy of sustainable development (Leal Filho, 2018). Hence, building the capacity of educators and policy support at international, regional, national and local levels will help drive these changes in learning institutions. Empowered Youth and local communities interacting with education institutions become key actors in advancing sustainable development (Alexanda, Julia, & Won, 2018). In the field of science education, there is a growing body of literature or research on teaching and learning about Socio-Scientific Issues (SSI) with an ardent focus on sustainability. The traditional curriculum where students confirm canonical theories, concepts, and processes through predictable classroom based-inquiry is replaced by complex science-based real-world problems, where science is understood as a powerful resource, knowledge-based and repertoire of methods and strategies for contributing to possible solutions (Vaughan, 2012).

The traditional certainties around what science should be studied, how and why, and what should count as optimal student learning are all problematized by this shift to an emphatically applied focus. The field of Socially Acute Questions (SAQs) represents a French orientation for the teaching of Socio-Scientific Issues (SSIs) (Laurence, 2013). Even as researchers broadly agree on the rationale for SSI orientation and concur about broad principles for its enactment, many areas

remain under-researched and emergent. America's last competitive advantage, warns Harvard Education fellow Tony Wagner, its ability to innovate is at risk as a result of the country's lacklustre education (Creating Innovators, 2012).

CREATIVITY IN EDUCATION

An idea that has novelty, but lacks in value or effectiveness to other people, cannot be considered "creative" (Cropley, 2003; Henriksen, Mishra, & Fisser, 2016). Two notable factors in the creativity conversation are "novelty" (or, newness, originality, freshness, uniqueness among others) and "effectiveness" (or value, usefulness and quality) (Henriksen & Mishra, 2015; Sternberg, 2006). While these may be ubiquitous in many definitions, some experts have also called for the inclusion of a subtler third component. Sternberg and O'Hara (1999) argued that "task appropriateness" should be added to the definition, speaking to the contextuality in creative work. The above indicates that creativity lies in the ability to create ideas or works that are "novel, high in quality and task appropriate". This suggests that creative work is a dependent context, because it is assigned value to the domain it is created within (Mishra & Henriksen, 2013). An innovative mathematical proof or unique beautiful painting are incredibly different things, yet they are both "creative". They both have an aesthetic component that goes beyond novelty and utility. Mishra and Koehler (2008) describe this aesthetics sensibility in context as "wholeness," which is a third crucial component of creativity. Thus they offer a "New" (novelty, effective, whole) definition of creativity.

In an educational context, Henriksen and Mishra (2018) suggest that creativity is both "novel," and "effective," in addition to the subtler component of "wholeness" (or context, important to education). Recent scholars have focused on this definition of creativity, along with attempts to develop rubrics to measure creative student output (Henriksen, Mishra, & Mehta, 2015). Encouraging creativity in schools can be approached in at least two ways. One way assumes that creativity and learning are separate or competing phenomena. Such a view represents an "either/or" distinction that allows educators to focus on either supporting student creativity at the expense of learning or either supporting learning at the expense of nurturing creativity (Beghetto, 2013). Given that schools are explicitly designed to promote academic learning, efforts aimed at expanding resources on something viewed as different or incompatible with this primary goal of schools likely will be view as extra-curricular and given little or no resources or systematic attention (Aljughaiman & Mowrer-Reynolds, 2005; Cotter, Pretz, & Kaufman, 2016). As discussed elsewhere (Gajda, Karwowski, & Beghetto, 2017), creativity and academic learning involve change. Both represent processes and products. And both have emergent and idiosyncratic

features. These views posit that creativity and learning are compatible, mutually independent and capable of coexisting in schools and classrooms (Beghetto, 2013).

In Finland, a new ecosystem for learning was created (Niemi, Multisilta, Lipponen, & Vivitsou, 2014). Singapore for one has become one of the top countries on the Programme for International Student Assessment (PISA) test by cultivating strong school leadership, committing to ongoing professional development and exploring innovative models like its tech-infused Future Schools (EDUTOPIA, 2012a). In Shanghai, China, every low performing school is assigned a team of Master Teachers and administrators to provide weekly guidance and mentorship on everything from lesson plans to school Culture (EDUTOPIA, 2012b)

Creative Learning

Discourse on the place of creativity in learning is clear, but current research has alluded to the fact that theories of learning need to be broadened to include creative cognition, which is lacking (Beghetto, 2016). The consensus among creativity researchers is that creativity is largely domain-specific (Sawyer, 2012) that the ability to be creative in any given domain whether physics, painting, or musical performance is based on long years of study and mastery of a domain-specific set of cognitive structures. This is consistent with research showing that creativity requires a person to be extremely knowledgeable in his or her domain of activity-investing 10,000 hours (Ericsson, 2002). It has been stated that it is likely that teaching creativity leads to creative learning, suggesting that there is a need to describe the concept of creative learning and to analyse its possible constituents.

An empirically based and theoretically informed model of a creative learning community is grounded on principles and concepts which can take different forms in a particular setting or social practice. These include (1) immersion in the topic of interest, in traditions and the subject matter; (2) experimentation and inquiring learning; and (3) resistance from the material of interest (Lene, 2014). Given the important role that teachers play in student learning, Mark and Kim (2017) argued that teachers need to be informed not only about how to teach creatively and for creativity but also how to consider possibilities and understand things in new ways, thereby making a case that teachers creative learning is also crucial. For students to become creative learners and to develop their original thinking, Gregoire (2016) suggested that students should have the opportunity to work with ill-posed and open-ended problems, to go wrong and make mistakes, and to find different solutions to the same problem.

Learning Sciences research has provided strong evidence that the most creative learning, in all subjects, results from pedagogical strategies that are active, collaborative and improvisational (Keith, 2015). Empirically, researchers have found

indicators of creativity and academic learning tend to be positively related (Karwowski, Lebuda, Szumski, & Firkowska-Mankiewicz, 2017) and more so when measured with more task and content-specific measures (Karwowski et al., 2020). Moreover, this relationship becomes more and less pronounced at different levels of creative and academic achievement (Kawowski et al, 2020) which suggests that the pattern of the relationship between creativity and learning is rather nuanced and dynamic.

Creativity researchers who hold an interdependent perspective also recognized that just because schools have been designed to privilege sameness does not mean that learning that occurs in those settings precludes creativity (Glaveanu & Beghetto, 2017; Karwowski 2018). Scholars who endorse an interdependent perspective have long recognized that creativity and learning are mutually dependent. (Guilford, 1950; Vygotsky, 2004). This mutual dependence is best represented in a creative learning perspective which outlines how creativity and academic learning can mutually reinforce each other.

In terms of a learning environment, learning-in-creativity requires a classroom climate that is conducive to encouraging students to develop, test-out and share their unique perspectives and insights. In essence, such a classroom climate is not necessarily stable or fixed, but rather it's dynamic and changes across time and particular interactional situation (Gajda & Karwowski, 2017; Karwowski, 2019). The educational consequence of creativity from a creative learning perspective is therefore twofold: new and personally meaningful understanding of subject matter (at the individual level) and the potential to contribute to the learning of others (at the social level). For creative learning to occur, learning environments must be designed that address the teaching paradox to find the balance of creativity and structure that will optimise student teaching (Sawyer, 2011).

INNOVATION IN EDUCATION

Theodore Levitt "opined that creativity is thinking new things and innovation is doing new things" (Gao, 2012, p.1). Innovation is generally understood as a successful introduction of a new thing or method (Brewer & Tierney, 2012). Education is indispensable for society to thrive and prosper. It should not only embody elements of comprehensiveness but sustainable and should continuously evolve to meet the challenges of the fast-changing and unpredictable globalised world. This evolution must be systematic, consistent and scalable; therefore, school teachers, college professors, administrators, researchers and policymakers are expected to innovate the theory and practice of teaching and learning as well as other aspects of this complex organisation to ensure quality preparation of all students to life and work (Serdyukov, 2017). Innovation resembles mutation, the biological process that keeps

species evolving so they can better compete for survival (Hoffman & Holzhuter, 2012). Today's educational system is required to be both efficient and effective in achieving the mandate set for human capital formation (Atiku, 2020; Cornali, 2012). It is widely believed that a country's socio-economic well-being may be positively associated with the quality of education of its citizens.

The emergence of the knowledge society with the transformation of information through the media and increasing specialization on the part of the organisation call for high skill profiles and knowledge creation. A report by the Organization for Economic Cooperation and Development (OECD) indicated that "the pressure to increase equity and educational outcomes for students is growing around the world" (Vieluf, Kaplan, Klieme, & Bayer, 2012). Many in the USA seem to recognise that education at all levels critically needs renewal: higher education has to change-it needs more innovation (Wildavsky, Kelly, & Carey, 2012). The advent of Khan Academy, Udemy, Coursera and other Massive Open Online Courses (MOOCs) have opened new limitless possibilities for massive and efficient learning. Innovation maintains relevance in several aspects of educational architecture such as theory and practice, curriculum, teaching and learning, policy, technology, institutions and administration, institutional culture and teacher education. The primary focus of innovation in education in recent times has been technological (Heick, 2016). With the advances in information and communication technology, education has witnessed an array of sophisticate learning management systems, automated analytics, customisation or individualisation of learning and extending teaching and learning beyond the classroom through digitisation (Atiku, 2018).

Innovative Teaching

The success of any teaching activity is determined by a host of complex variables. The instructional material, the presentation of the content, the pedagogic skills of the facilitator, the learning environment and the motivation of students are all important. The variables must be kept in view to enhance the quality of education and learning. A fundamental question that has spawned fervent debate is on how to best educate children to be successful in an ever-changing global environment?

Fisher, Hirsh-Pasek, Gollinkoff, Singer, and Berk (2011) found that playful learning pedagogies not only promote important academic learning but also build the skills required for success in the 21st Century. Playful learning is a teaching approach that uses free-play and guided play activities to promote academic, socio-emotional and cognitive development. Innovation is viewed by many as a new pedagogic theory, methodological approach, teaching technique, instructional tool, learning process or instructional structure that when implemented produces a significant change in the teaching and learning experience of students. For innovative teaching to thrive;

the importance of instructors' professional development and lifelong learning capabilities cannot be overemphasised. Empirically, in schools where teachers reported higher average levels of innovative teaching practices, a professional culture was also aligned to support innovation, reflection and meaningful discourse about new teaching practices (UNESCO, 2013). Teachers education and professional development are key areas for innovative approaches, which must be inculcated to teach well (Marcus, 2012).

Instructional Strategies to Stimulate Creativity and Innovation

Teaching-learning processes in the 21st century is an enormous task. As society changes, these processes do not remain static. The instructor is compelled to adapt to meet the aspirations of society and surmount the challenges by adopting different pedagogical techniques and innovative approaches in teaching and learning (Atiku & Anane-simon, 2020). The single highest challenge an instructor faces is to sustain the interest of the class during a lesson. A blended approach which is a form of instructional strategies has opened a flexible learning environment to the instructor anytime and anywhere to better accommodate schedule through new technologies. These innovations in instructional strategy and design include; simulated teaching, tutorials, scriptwriting, learning by discovery, peer learning and direction of moving documentary (Nidhi, 2018). American education has taken little advantage of innovations that would increase instructional capacity, effectiveness and productivity. Results from Seechaliao (2017) indicates that instructional strategies using questions, classroom discussion, self-directed study, inductive and deductive thinking, media or social media enhance students engagement in learning activities and create innovation in learning.

TCS-Education World encourages and inspires instructors to innovate new practices and pedagogies to make learning joyful and improve learning outcomes through innovative strategies like field trips, outdoor activities for experiment learning by discovery. In a technological era, instructional strategies may lag without Information Technology (ICT) as learners frequently interact with the cyber world. As opposed to instructionism the learning sciences places a strong emphasis on deeper conceptual understanding, building on learner's prior knowledge and allowing for reflection to promote effective learning.

UNIVERSITY-INDUSTRY COLLABORATION

Cooperation of enterprise-university is a recent phenomenon and incipient (Unger, Marsan, Meissner, Polt, & Cervantes, 2018; Jarabkova, Chrenekova, & Rohacikova,

2019). However, it has gained widespread interest because of the high degree of innovation and economic growth associated with such a strategy (Mitive, 2009; Guan & Zaho, 2013; Iqbal, khan, & Senin, 2015). The escalating costs of equipping the existing manpower with the necessary skills and abilities, as well as undertaking research have strategically been pushing further the necessity to have strong partnerships between universities and industry (Atiku, 2021; Rosly & Armad, 2012). In the Tenth Malaysian Plan (2011-2015), the government emphasized strengthening industry and research collaboration as well as focusing on the industrial attachment that can help fresh graduates to meet the evolving requirements of industry (www.epu.gov, 2010). For effective collaboration of university-industry in open innovation, Draghici, Baban, Ivascu, and Sarca (2015) suggested six key areas to put into consideration, which include:

- Existence in the University of a well-defined structure that supports in an efficient manner research projects
- The presence of effective project management and well-executed communication, monitoring and review.
- Involvement of young researchers in identifying the characteristics of the economic environment.
- Developing new partnerships and supporting existing projects to launch new opportunities.
- Organisational culture is an important pillar in the openness that universities have toward collaborating with industry
- Dissemination strategy to be strengthened to share research and use the elements of marketing to attract new partners.

Analysing classic academia and industry/industrial partners shows that they operate in distinct organizational cultures which differ greatly in their underlying beliefs, values and processes (Ehrismann & Patel, 2015). The Culture of Universities is based on tracking research directions based on discovery to create knowledge and to educate the workforce. It can be said that public universities have a mission that contributes to society. In contrast, Industry/Industrial partners are at the opposite pole from the perspective of knowledge because knowledge is used to develop products and services. Knowledge transfer is not made, instead, intellectual property is on the focus (Banel-Estanol, Jofre-Bonet, & Meissner, 2010). Universities have a track record of pursuing fundamental research as well as educating people but they may not provide ready-made workers competent of performing in any conditions. Universities have the potential of building capacity and skills of prospective workers to fit into the industry if a sustainable partnership is established. Finally, one of the outcomes of research conducted by Zan, Yao, and Chen (2019) is that government

policies have a significantly positive impact on the stable evolution of University-Industry Collaboration for innovation, and incentive measures are more effective than punitive ones.

Benefits of University-Industry Collaboration in Stimulating Innovation

Studies have shown that companies that collaborate with universities typically have higher productivity rates than companies that do not have such collaboration (Malairaja & Zawdie, 2008). Industries do not necessarily have all the competencies to perform each operation in-house for the development of competitive products, hence collaboration helps in building synergies for the mutual benefit of the University, Industry and the Government. Companies that collaborate also enjoy a greater benefit in terms of reducing cost using a multidisciplinary approach, collaborators reputation, and expertise in a particular field, research and development (R&D) and are also able to produce quality products at a competitive cost. Findings support the argument that businesses gain tremendous economic value from University-Industry Partnerships as productivity is increased (Arlindo, Silva, & Santos, 2020). Studies show that heterogeneity moderates the relationship between density and knowledge growth (Chongfeng Mao, King, Harms, & Fang, 2020). Through a positive moderating effect, new knowledge generation in the entire innovation network; provide a basis for subsequent knowledge transfer (Chongfeng Mao, King, Harms, & Fang, 2020). Findings from a study conducted by Giorgio, Pyka, and Scholz (2014) further consolidate the analysis of knowledge interactions among heterogeneous actors with the following deductions:

- Universities tend to shift from a basic to an applied research orientation as a result of the relationship with industry
- Universities innovative capabilities benefit from industry financial resources but not so much from cognitive resources of the companies.
- Biotech company's innovative abilities largely benefit from knowledge interactions with the Universities.
- Adequate policies in terms of public basic research funding can counteract the negative effects of university-industry relationships on university research orientation.

Governments tend to benefit more from university-industry collaborations. For, example, Saudi Arabia has established a goal of steering its economy away from reliance on natural resources towards the development of knowledge-based industries

expected to be driven by strong and concerted collaborative relationships between conventional universities and private industries (Mohammad & Mohammad, 2015).

RECOMMENDATIONS

Developing innovation entails the provision of resources and making long term investments in education. Many leaders and policymakers have focused on the institutional, administrative and political challenges that make it difficult for institutions to explore more innovative organisational forms. To foster creativity and innovation in higher education institutions, the following are worthy of consideration.

- Curriculum overhaul; opportunities for multiple learning trajectories that could result from a creative enquiry process
- Assessment should incorporate and reward a sort of deep understanding resulting from creative learning
- Learning goals should explicitly incorporate creative learning,
- Professional development should be based on creativity research and research in the content areas
- Establishment of UIC Centres to facilitate research, transfer of knowledge and unleash creativity and innovation.

Future educational policies should be multidimensional in approach and should be directed towards revitalising the educational system (structures, tools and stakeholders) so that it breeds learners' autonomy, self-efficacy, critical thinking, creativity and advances a common culture that supports innovation. The power of instructional strategies to influence instructor's attitudes is not inherent in the strategy itself but in the application of the process as it allows it to increase exponentially. Governments also have pivotal roles to coordinate and facilitate the successful implementation of university-industry collaborative agenda through educational policy development. Universities on the other hand, should be proactive in consolidating their relationship with the industry. The industry should also develop a keen interest in universities by setting their laboratories in universities, funding research, and absorbing students for traineeships and internships. University-industry collaboration has been a leading discussion for many years, however, only a proper sustainable partnership may yield mutual benefit.

FUTURE AREAS OF RESEARCH

Even as this chapter has succeeded in expanding knowledge on stimulating creativity and innovation through apt educational policy. There are stupendous emergent areas of research on the subject matter. For example, in an era of Artificial Intelligence (AI) and hyper-technological invasions; future educational policy and research should focus on harmonizing the human aspect of education with AI. Notwithstanding, cultural and philosophical differences still exist between Academia and Industry. Future research should explore means of establishing ideological coherences for effective university-industry collaboration. Also, much attention to research has often been placed on large multinational companies and well-known universities. Future research may focus on the use of University-Industry collaboration to advance SME'S, startups and Non-Governmental Organisations (NGO's), thereby promoting creativity and innovation for economic growth and development.

CONCLUSION

The main objective of this chapter was to examine the place of educational policy development in stimulating creativity and innovation. Current educational policies place a premium on "Quality" and "Access." The complex indicator in determining the quality of education in recent times may necessitate the use of creative learning to enhance creativity and innovation. The advent of MOOCs and other forms of online educational platforms had triggered exponential access to education, especially during the pandemic. To stimulate creativity and innovation among students in a digital age and a virtually dominated learning environment; educational policy should be developed to ascribe to the patterns of experiential learning rather than orthodox learning approaches. This will help expose students to real-world problems consequently unleashing creativity and innovation. Deliberate educational policies to foster university-industry collaboration with a focus on creativity and innovation will help augment the deficits of academia in providing quality applied research, human and technical resource solutions for industrial consumption.

REFERENCES

Alexanda, L., Julia, H., & Won, J. B. (2018). *Issues and Trends in Education for sustainable development*. UNESCO Publishing.

Aljughaiman, A., & Mowrer-Reynolds, E. (2005). Teachers' conception of creativity and creative students. *The Journal of Creative Behavior*, *39*(1), 17–34. doi:10.1002/j.2162-6057.2005.tb01247.x

Arlindo, M., Silva, R. G., & Santos, G. (2020). Why most University-Industry Partnerships Fail to Endure and How to Create Value and Gain Competitive Advantage through Collaboration -A Systemic Review. *Quality Innovation Prosperity*, *24*, 1–17.

Atiku, S. O. (2018). Reshaping Human Capital Formation Through Digitalization. In P. Duhan, K. Singh, & R. Verma (Eds.), *Radical Reorganization of Existing Work Structures Through Digitalization* (pp. 52–73). IGI Global. doi:10.4018/978-1-5225-3191-3.ch004

Atiku, S. O. (2020). Knowledge Management for the Circular Economy. In N. Baporikar (Ed.), *Handbook of Research on Entrepreneurship Development and Opportunities in Circular Economy* (pp. 520–537). IGI Global. doi:10.4018/978-1-7998-5116-5.ch027

Atiku, S. O. (2020). *Human Capital Formation for the Fourth Industrial Revolution*. IGI Global. doi:10.4018/978-1-5225-9810-7

Atiku, S. O. (2021). Human Capacity Building Through University-Industry Collaboration. In D. Günay, T. Asunakutlu, & O. Yildiz (Eds.), *University-Industry Collaboration Strategies in the Digital Era* (pp. 321–336). IGI Global. doi:10.4018/978-1-7998-3901-9.ch016

Atiku, S. O., & Anane-simon, R. (2020). Leadership and Innovative Approaches in Higher Education. In N. Baporikar & M. Sony (Eds.), *Quality Management Principles and Policies in Higher Education* (pp. 83–100). IGI Global. doi:10.4018/978-1-7998-1017-9.ch005

Atiku, S. O., & Boateng, F. (2020). Rethinking Education System for the Fourth Industrial Revolution. In S. O. Atiku (Ed.), *Human Capital Formation for the Fourth Industrial Revolution* (pp. 1–17). IGI Global. doi:10.4018/978-1-5225-9810-7.ch001

Atiku, S. O., & Lawal, I. O. (2021). Human Capital Development Strategy for a Sustainable Economy. In S. O. Atiku & T. Fapohunda (Eds.), *Human Resource Management Practices for Promoting Sustainability* (pp. 116–133). IGI Global. doi:10.4018/978-1-7998-4522-5.ch007

Banel-Estanol, A., Jofre-Bonet, M., & Meissner, C. (2010). *The impact of industry collaboration on Research: Evidence from Engineering Academics in the UK*. London: Working Paper City University.

Beghetto, R. (2013). killing ideas softly? The promise and perils of creativity in the classroom. Charlotte, NC: Information Age Publishing.

Beghetto, R. A. (2016). Creative learning: A fresh look. *Journal of Cognitive Education and Psychology*, *15*(1), 6–23. doi:10.1891/1945-8959.15.1.6

Brewer, D., & Tierney, W. (2012). Barriers to Innovation in the US Education. In B. Wildavsky, E. Kelly, & K. Carey (Eds.), *Reinventing Higher Education: The Promise of Innovation* (pp. 11–40). Harvard Education Press.

Brewer, D., & Tierney, W. (2012). Reinventing Higher Education: The Promise of Innovation. Harvard Education Press.

Chongfeng Mao, X. Y., King, Z., Harms, R., & Fang, G. (2020). Knowledge growth in University-Industry innovation networks: Results from a Simulation Study. *Technological Forecasting and Social Change*.

Cornali, F. (2012). Effectiveness and efficiency of educational measures. *Scirp, 2*, 255-260. Retrieved from http://www.SciRP.org/journal/sm

Cotter, K. N., Pretz, J. E., & Kaufman, J. C. (2016). Applicant extracurricular involvement predicts creativity better than traditional admissions factors. *Psychology of Aesthetics, Creativity, and the Arts*, *10*(1), 2–13. doi:10.1037/a0039831

Creating Innovators. (2012). *America's Last Competitive Advantage*. Retrieved from http://www.creatinginnovators.com

Crichton, D. (2015). *Searching for the next wave of educational innovators*. TechCrunch. Retrieved from https://www.techcrunch.com/2015/06/27/-education-next-wave

Cropley, A. (2003). *Creativity in education and Learning*. Routledge Falmer.

Draghici, A., Baban, C., Ivascu, L., & Sarca, I. (2015). Key Success Factors for University-Industry Collaboration in Open University. *8th Annual International Conference of Education, Research and Innovation*.

EDUTOPIA. (2012a). *George Lucas Educational Foundation.* Shanghai, China: EDUTOPIA. Retrieved from https://www.edutopia.org/education-everywhere-international-shanghai-china-video

EDUTOPIA. (2012b). *George Lucas Educational Foundation*. Singapore: EDUTOPIA. Retrieved from https://www.edutopia.org/Education-everywhere-international-Singapore-Video

Ehrismann, D., & Patel, D. (2015). Key Success factors for University-industry collaboration in open innovation. *8th Annual International Conference of Education, Research and Innovation*.

Ericsson, K. (2002). Attaining Excellence Through Deliberate Practice: Insights from the Study of Expert Performance. In The Pursuit of Excellence in Education (pp. 21-55). Academic Press.

Fields, Z., & Atiku, S. O. (2017). 'Collective Green Creativity and Eco-Innovation as key drivers of Sustainable Business Solutions in Organisations. In *Collective Creativity for Responsible and Sustainable Business Practice* (pp. 1–25). IGI Global. doi:10.4018/978-1-5225-1823-5.ch001

Fisher, K., Hirsh-Pasek, K., Gollinkoff, R., Singer, D., & Berk, L. (2011). Playing Around in Schools: Implications for Learning and Educational Policy. Oxford Library of Psychology, 341-346.

Gajda, A., Beghetto, R. A., & Karwowski, M. (2017). Exploring Creative Learning in the Classroom: A Multi-method Approach. *Thinking Skills and Creativity*, *24*, 250–267. doi:10.1016/j.tsc.2017.04.002

Gajda, A., Karwowski, M., & Beghetto, R. (2017). Creativity and Academic Achievement: A meta-analysis. *Journal of Educational Psychology*, *109*(2), 269–299. doi:10.1037/edu0000133

Gao, B. M. (2012). Creativity is thinking up new things. Innovation is doing new things. *Schulich Leader Scholarship.* Retrieved 17 March 2021 from https://www.schulichleaders.com/Creativity-thinking-new-things-innovation-doing-new-things

Giorgio, T., Pyka, A., & Scholz, R. (2014). R&D and Knowledge Dynamics in University-Industry relationships in Biotech and Pharmaceuticals: An Agent-Based Model. *International Journal of Biotechnology*.

Girourx, H. A., & Schimdt, M. (2004). Closing the achievement gap: A metaphor for children left behind. *Journal of Educational Change*, *5*(3), 213–228. doi:10.1023/B:JEDU.0000041041.71525.67

Glaveanu, V., & Beghetto, R. (2017). Creative contradictions in Education: cross-disciplinary paradoxes and perspectives. Springer International Publishing.

Gregoire, J. (2016). Understanding Creativity in Mathematics for Improving Mathematical Education. *Journal of Cognitive Education and Psychology*, *15*(1), 24–36. doi:10.1891/1945-8959.15.1.24

Guan, J., & Zaho, Q. (2013). The Impact of University-Industry Collaboration Networks on Innovation in Nanobiopharmaceuticals, Technol. *Forecast*, 1271-1286.

Guilford, J. (1950). Creativity. *American Psychologist*, 469-479.

Heick, T. (2016). *12 Barriers to Innovation in Education.* Retrieved from TeachThought: https://www.teachthought.com/the-future-of-learnig/disruption-innovation/12-barriers-innovation-education

Henriksen, D., & P, M. (2018). Creativity, Uncertainty and Beautiful Risks: A Conversation with Dr Ronald Beghetto. *TechTrends*, 541-547.

Henriksen, D., & Mishra, P. (2015). We teach who we are: Creativity in the lives and practices of accomplished teachers. *Teachers College Record*, *117*, 070303.

Henriksen, D., Mishra, P., & Fisser, P. (2016). Infusing creativity and technology in 21st-century education: A systemic view for change. *Journal of Educational Technology & Society*, *19*(3), 27–37.

Henriksen, D., Mishra, P., & Mehta, R. (2015). Novel, Effective, Whole: Towards a new framework for evaluations of creative products. *Journal of Technology and Teacher Education*, 455–478.

Hoffman, A., & Holzhuter, J. (2012). The Evolution of Higher Education: innovation as natural selection. American Council of Education.

Iqbal, A., Khan, A., & Senin, A. (2015). Reinforcing the National innovation system of Malaysia based on University-Industry Research Collaboration: A System thinking Approach. *International Journal of Management Sciences and Business*, 6-15.

Jarabkova, J., Chrenekova, M., & Rohacikova, O. (2019). University and Practice-Cooperation in Research in and Science: Case Study of the Slovak University of Agriculture in Nitra. *Quality Innovation Prosperity*, 136-154.

Jaschik, S. (2015, January 20). *Well-prepared in their own eyes*. Retrieved from Inside Higher Education: https://www.insidehighered.com/news/2015/01/20

Karwowski, M. (2018). The flow of Learning. *Europe's Journal of Psychology*, *14*(2), 291–295. doi:10.5964/ejop.v14i2.1660 PMID:30008947

Karwowski, M. (2019). Classroom Creative Climate: From a static to a dynamic perspective. The Palgrave Handbook of Social Creativity Research, 487-499.

Karwowski, M., Jankowska, D. M., Brzeski, A., Czerwonka, M., Gajda, A., Lebuda, I., & Beghetto, R. A. (2020). Delving into creativity and learning. *Creativity Research Journal*, *32*(1), 4–16. doi:10.1080/10400419.2020.1712165

Karwowski, M., Lebuda, I., Szumski, G., & Firkowska-Mankiewicz, A. (2017). From moment-to-moment to day-to-day: Experience sampling and dairy investigation in adults' everyday creativity. *Psychology of Aesthetics, Creativity, and the Arts*, *11*(3), 309–324. doi:10.1037/aca0000127

Keith, S. (2015). A Call to Action: The Challenges of Creative Teaching and Learning. *Teachers College Record*, 1–33.

Kioupi, V., & Voulvoulis, N. (2019). Education for sustainable development: A systemic framework for connecting the SDGs to educational outcomes. *Sustainability*, *11*(21), 6104. doi:10.3390u11216104

Laurence, S. (2013). Topics and Trends in Current Science Education. *Springer Link*, 37-58.

Leal Filho, W., Raath, S., Lazzarini, B., Vargas, V. R., De Souza, L., Anholon, R., Quelhas, O. L. G., Haddad, R., Klavins, M., & Orlovic, V. L. (2018). The role of transformation in learning and education for sustainability. *Journal of Cleaner Production*, *199*, 286–295. doi:10.1016/j.jclepro.2018.07.017

Lene, T. (2014). A Situated Model of Creative Learning. *European Educational Research Journal*, 107–116.

Levasseur, A. (2012, July 17). *Mind Shift*. Retrieved from kqed: http://www.kqed.org/mindshift/2012/07/17

Malairaja, C., & Zawdie. (2008). *Technology Analysis and Strategic Management*. Academic Press.

Marcus, J. (2012). Old School: Four Hundred Years of Resistance to Change. In B. Wildavsky, A. Kelly, & K. Carey (Eds.), *Re-inventing Higher Education: The Promise of Innovation* (pp. 41–72). Harvard Education Press.

Mark, S., & Kim, K. (2017). Creative Pedagogy: A Case for Teachers Creative Learning being at the Centre. *Teaching Education*, 317–332.

Mishra, P., & Henriksen, D. (2013). A New Approach to Defining and Measuring Creativity: Rethinking Technology and Creativity in the 21st Century. *TechTrends*, *57*(5), 10–13. doi:10.100711528-013-0685-6

Mishra, P., & Koehler, M. (2008). *Introducing Technological Pedagogical Content Knowledge.* Annual Meeting of American Educational Research Association.

Mitive, A. (2009). *Evaluation of an Academic-Industry Research Collaboration*. Social Science Research Network.

Mohammad, S. K., & Mohammad, A. A.-F. (2015). Fostering University-Industry Collaboration in Saudi Arabia through Technology Innovation Centers. *Tailor & Francis Online*, 224-237.

Nidhi, A. (2018). A Study of Innovation in Instructional Strategies and Designs for Quality Enrichment in Higher Education. *Cosmos An International Journal of Arts and Higher Education*, 1-23.

Niemi, H., Multisilta, J., Lipponen, L., & Vivitsou, M. (2014). *Finnish Innovation and Technologies in Schools: A guide towards New Ecosystems of Learning*. Sense Publishers. doi:10.1007/978-94-6209-749-0

Rosly, O., & Armad, F. O. (2012). University and Industry Collaboration: Towards a Successful and Sustainable Partnership. *Procedia: Social and Behavioral Sciences*, 575–579. http://www.sciencedirect.com

Sarooghi, H., Libaers, D., & Burkemper, A. (2015). Examining the relationship between creativity and innovation: A meta-analysis of organizational, cultural, and environmental factors. *Journal of Business Venturing*, *30*(5), 714–731. doi:10.1016/j.jbusvent.2014.12.003

Sawyer, R. (2011). *Structure and Improvisation in Creative Teaching*. Cambridge University Press. doi:10.1017/CBO9780511997105

Sawyer, R. (2012a). *Explaining Creativity: The Science of Human Innovation*. Oxford University Press.

SDG4EDUCATION2030. (2021, March 15). *Sustainable Development Goal 4*. Retrieved from Sdg4edcuation2030: http//:www.sdg4education2030.org

Seechaliao, T. (2017). Instructional strategies to support creativity and innovation in education. *Journal of Education and Learning*, 201-208.

Serdyukov, P. (2017). Innovation in Education: What works, What doesn't and What to do about it? *Journal of Research in Innovative Teaching and Learning*, 4-33.

Sternberg, R. (2006). The Nature of Creativity. *Creativity Research Journal*, 87–98.

Sternberg, R., & O'Hara, L. (1999). Creativity and Intelligence. Handbook of Creativity, 251-272.

Thomson, J. (2015, July 9). *Poor Grades*. Retrieved from Inside Higher Education: http://www.insidehighered/news/2015/06/09

UNESCO. (2013). *ICT Education.* Retrieved from UNESCO: http//:www.unescobkk.org/education/ICT

UNESCO. (2014). UNESCO Roadmap for Implementing the Global Action Programme on Education for Sustainable Development. *NCVER's International Tertiary Education Research Database*.

Unger, M., & Marsan, G., Meissner, Polt, W., & Cervantes, M. (2018). Knew Challenges for Universities in the Knowledge Triangle. *The Journal of Technology Transfer*, 806–819.

United Nations. (2015). *Sustainable development goals: Promote inclusive and sustainable economic growth, employment, and decent work for all*. Retrieved 3 December 2019 from https://www.un.org/sustainabledevelopment/economic-growth/

Vaughan, P. (2012). Acting on Sustainability. *Research in Science Education*, 149–154.

Vieluf, S., Kaplan, D., Klieme, E., & Bayer, S. (2012). *Teaching practices and Pedagogical Innovation: Evidence from TALIS*. OECD Publishing. Retrieved from https://www.oecd.org/edu/school doi:10.1787/9789264123540-en

Vygotsky, L. (2004). Imagination and Creativity in Childhood. *Journal of Russian & East European Psychology*, *42*(1), 7–97. doi:10.1080/10610405.2004.11059210

Wildavsky, B., Kelly, A., & Carey, K. (2012). *Reinventing Higher Education: The Promise of Innovation*. Harvard Education Press.

Zan, A., Yao, Y., & Chen, H. (2019). *University-Industry Collaborative Innovation Evolutionary Game and Simulation Research: The Agent Coupling and Group Size View*. IEEE.

KEY TERMS AND DEFINITIONS

Artificial Intelligence (AI): Intelligence demonstrated by machines unlike the natural intelligence displayed by humans and animals.

Education for Sustainable Development (ESD): Education that encourages changes in knowledge, skills, values and attitudes to enable a more sustainable and just society for all.

Instructional Strategies (IS): Techniques used by teachers to help students become independent, strategic learners.

Learning Management Systems (LMS): A software application for the administration, documentation, tracking, reporting, automation and delivery of educational courses, training programmes or learning and development programmes

Massive Open Online Courses (MOOCs): These are free online courses available for anyone to enrol.

Socially Acute Questions (SAQs): French Orientation for the Teaching of Socio-Scientific Issues.

Socio-Scientific Issues (SSI): Controversial, socially relevant, real-world problems that are informed by science and often include an ethical component.

University-Industry Collaboration (UIC): Refers to the interaction between any part of the higher education system and industry.

Chapter 7
Teaching How to Work With People (In Person and Remotely) and Technology (Artificial Intelligence and Robots) Using Creativity and Innovation

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ABSTRACT

Individuals are looking for ways to continue to contribute their skills, to gain value, and to improve their employment prospects. On the other hand, employers face important choices as to whether to use technological advances to drive efficiency and reduce costs or to explore how to harness technology to reshape jobs in ways that deliver more value and meaning. This has resulted in educators and policy makers facing calls to rethink how we should prepare and train people for a changing workplace and what paths people can take to gain skills over a longer career with multiple chapters of career re-engineering. The objective of this chapter is to outline the dimensions of the future of work and the corresponding questions that they pose. An analysis of current extant literature was explored, and practical answers to the questions were used to develop a theoretical framework for teaching how to work with people (in person and remotely) and technology (artificial intelligence and robots) using creativity and innovation in a post-pandemic society.

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INTRODUCTION

Individuals are looking for ways to continue to contribute their skills, to gain value and to improve their employment prospects. On the other hand, employers face important choices as to whether to use technological advances to drive efficiency and reduce costs, or to explore how to harness technology to reshape jobs in ways that deliver more value and meaning. This has resulted in educators and policy makers facing calls to rethink how should we prepare and train people for a changing workplace and what paths people can take to gain skills over a longer career with multiple chapters of career re-engineering. The objective of this chapter is to outline the dimensions of the future of work and the corresponding questions that they pose. An analysis of current extant literature will be explored and practical answers to the questions will be used to develop a theoretical framework for teaching how to work with people (in person and remotely) and technology (Artificial intelligence and robots) using creativity and innovation in a post-pandemic society. The literature in this chapter indicated the need for understanding the impact of the current global pandemic on the new way of work and the use of new technologies in order to provide recommendations for policymakers that can stimulate creativity, innovation and better education in the post-pandemic era.

BACKGROUND AND IMPORTANCE

According to Schwartz et al. (2019a), the future of work can be defined as a a result of many forces of change affecting three deeply connected dimensions of an organization: **work** (the what), the **workforce** (the who), and the **workplace** (the where). However, these dimensions also pose very relevant questions to employers and educators on what skills and training are required to continuously support these three dimensions. The first question poses what work can be done and with robotics, cognitive and AI technologies (Schwartz et al., 2019b). According to Capotescu (2019), the speed of the AI development can replace a lot of routine jobs. Thereafter, the second question poses who can do the work considering the continuum of talent from full-time, to managed services, and freelancers (Schwartz et al., 2019b). It must also be noted that predictive analytics and cognitive automation increase human intelligence and make use of big data, enabling a stronger analysis of the large inflow of data used daily (Johnson et al, 2019). The third question poses how are workplaces and work practices reshaping where and when work is done given the new combinations of collaborative, teaming, and digital reality technologies (Schwartz et al., 2019b). A study by Yorks et al. (2020) illustrates this new workplace reality where increased use of assisted intelligence enables obstetricians to spend

more time interacting directly with patients and away from administrative medical records. Likewise, the increased use of increased intelligence allows a radiologist to spend more time reflecting on the appropriate course of patient treatment, due to new insights gleaned from big data algorithms to proactively identify the pros and cons of different courses of action (Yorks et al., 2020).

However, a recent study argues that the existing educational system is not capable of supporting current or future requirements without fairly dramatic overhaul. Ultimately, the consensus from leaders involved in the study was that reskilling will require a cross-sector approach that is more dynamic, less siloed and more representative of society at large (Rotatori et el., 2020).

Nature of Work

The future of work requires teaching people the dispositional ways to work with technology using creativity and innovation. These dispositions are what leaders bring to the event from their context, personal characteristics, perspectives, ideals, convictions, personality attributes, talents, areas of competence, and conceptions of leadership (Mutch, 2020).

Technologies and Automation

Improvements of emerging technology and automated processes lead the occupations to a phase called work polarization. The professional market is categorized into three categories of careers. Cognitive occupations that require a degree and normally have high incomes. In the other hand, there are occupations that are run manually, professions that offer all kinds of services, and typically have poor incomes. The type of the third career is between the two. It can be defined as a person doing everyday activities, having an average level of income and a middle level of education (Autor, 2015). It would be almost impossible to substitute cognitive occupations with technology. Furthermore, occupations where full manual supervision is needed cannot be replaced by the use of automation. Around the same time, routine job tasks can be carried out more efficiently using digital technology (Shim & Yang, 2018).

When the number of tasks performed by automatic technology increases, the phenomenon of job polarization appears. It involves an increased demand for cognitive professions and an increase in recruitment for positions where a low level of education is needed. This is because the middle form of occupation is squeezed out of the industry. The middle-class occupations with average wages, where middle-level education is expected, are most influenced by technology automation, and this is where the accounting profession is located (Goos & Manning, 2007) Automation begins the task of driving people out of the profession. This ensures that there would

be a reduction in the number of employees needed, as all accounting processes will be done by computers.

Workers specialized in economic aspects will not be included with day-to-day activities and will then be expected to do various duties, such as assisting with analytics and consultancy services. They will have the ability to improve managerial and decision-making systems. The standards laid down for consultants are also changing. Companies tend to employ candidates with higher qualifications and analytical skills in the recruitment process. It could also be difficult for economists with little experience to get a career. At the same time, automated technologies can overtake accountants with less reasonable capabilities (Frey & Osborne, 2017).

Technology Innovation

Technology is a key factor in building flexibility in the tourism sector (Hall et al., 2020). Disasters are helping to accelerate technological transition. During COVID-19, people have received huge assistance from technology experts. There are instances of robotics replacing humans, smartphone devices being used to monitor people's interactions, or Big Data analytics predicting the distribution of COVID-19 among the masses. Robots, automation technologies and artificial intelligence will minimize costs, maximize liquidity and increase flexibility.

This will also help to preserve social distances (Assaf & Scuderi, 2020; Thomas & Chopra, 2020) as technology will link people without any physical interaction. Technology will also deal with particular problems such as screening of travelers, identifying COVID-19 cases and monitoring connections, ensuring online schooling for pupils, etc (Hall et al., 2020). Many surveys indicate an increase in consumer confidence in technology, their desire to communicate, and their willingness to shift their attitudes towards robots. People have now begun to ignore privacy concerns in order to make technologies more important (Stankov et al., 2020).

Values, Beliefs and Concerns

From a more philosophic point of view, the COVID-19 drama is indeed a kind of stress test for our structure and is potentially an occasion to rethink some of the elements underpinning it, as well as its sustainability (Naidoo & Fisher 2020). Goals and targets that focus on an increasing global economy can not be reached due to the devastating impact of COVID-19 on developing and developed economies alike. For example, keeping electricity sustainable and renewable would entail the development of new markets and funding.

Further developing industry, innovation and infrastructure would need additional investment. Concerns about goals that clash with each other have been posed

before; they are pressing now (Nillsson et al., 2016). For example, upgrading the transport network in developing countries is a crucial priority for manufacturing, innovation and technology. However, in order to re-design the world and our lives accordingly, we can first truly consider them. We certainly recognize the role of cultural influences, views, personal interests and convictions. At the same time, we think it will be important to consider global success in a data-driven and relatively structured way (Naidoo & Fisher 2020).

Workforce

The future of the workforce requires teaching people the relational way to work with technology using creativity and innovation. These are ways in which leaders deliver a unifying vision and create a sense of identity within the organization, generate engagement, promote leadership, establish positive and trusted connections and foster cooperation (Mutch, 2020).

Managing and Attracting Talent

Talent Management is a strategic practice that aims to build a competitive advantage (Ngoc su et al., 2021). In the recovery process, informants expressed questions over maintaining the workforce and hiring skilled workers while their best employees sought job openings in markets that were not as impacted by COVID-19. Measures to retain staff are critical for recovery following a crisis (Kotze et al., 2020).

Organizations must reinvent their principles and business ethos in order to be consistent with modern ways of operating, for example: talent recruitment must consider what issues such as face-to-face mentoring can be achieved in the same way in the digital age. Similarly, the ethical traditions present in the organization need to be reconsidered. The desire to resort to pre-pandemic methods should be discouraged, thereby avoiding errors that have already been made. It is important to build new systems for the modern environment, to educate and prepare the organisation so that there are no gaps in face-to-face and virtual job processes (de Lucas Ancillo et al., 2020).

Developing Skills and Capabilities

This category considers the acceleration of digital transitions to be the catalyst for remote work and automation of the workplace, thus highlighting critical holes in IT technology, labor preparation and digital skills growth. The outbreak of COVID-19 raised a number of concerns within organizations about the effect it may have on the

company's digitization process, which was already underway in some cases, while not yet underway in others (de Lucas Ancillo et al., 2020).

However, the adaptation to COVID-19 has been remarkably successful because, prior to the crisis, technology already had a very strategic value for companies, thus, in a very short time, new remote work models have been implemented, employees have been trained across digital platforms in new digital solutions that have not been used to operate, procedures have been adapted and procedures have been adapted. As a result, firms with a high degree of digitalisation have been able to perform this transition process quicker and more effectively relative to non-digitalized enterprises (de Lucas Ancillo et al., 2020).

Aligning Potential and Organisational Purpose

Organizational resilience can involve offensive and defensive responses. Defensive responses include health and safety, ambulance and motivational psychology, which were pre-lockdown interventions intended to defend both HR and company. Offensive responses are initiatives, such as broad-based capital network enhancement, talent acquisition, task redeployment and success management, intended to help hospitality and tourism companies rebound from the lockdown. In particular, HR practices used during the lockdown (e.g. economic capital enhancement, diffused control and transparency enhancement, and social capital enhancement) are considered both offensive and defensive responses that allow businesses to cope with the crisis and then respond to transition in order to improve corporate resilience (Ngoc su et al., 2021).

Several elements within an enterprise contribute to the growth of an inclusive community. This include common awareness of inclusion (Ely and Thomas, 2011), committed leaders (Kuknor & Bhattacharya, 2021) corporate values and expectations regarding diversity (Pless and Maak, 2004) as well as HR policies and procedures that foster an environment of inclusion. Members concentrate on leveraging diversity and promoting equality.

Workplace

The future of workplace requires teaching people the situational ways to work with technology using creativity and innovation. This involves leaders evaluating problems when they unfold, considering the context, being mindful of diverse reactions (including cultural sensitivities), making prompt decisions, reacting to evolving demands, making use of tools (both material and personal), providing guidance, responding flexibly, thinking dynamically, and continuously reassessing options (Mutch, 2020).

Collaboration across Physical Distances

The benefits that this condition has provided to employers and organisations include the following: (1) reduction of travel times and resulting environmental impact; (2) improved efficiency and better use of time; (3) a balance between family and job, along with a capacity for greater happiness; (4) an increased sense of protection and safety with regard to the potential consequences of the pandemic; (5) the opportunity to reach expertise without national boundaries; (6) Implementation of digital processes associated with remote work; (7) Strengthening organizational culture; and (8) Reduction in real estate costs. Therefore, when contemplating the future of the workplace, it must be taken into account that remote employment has clear advantages in terms of people's satisfaction and changes in the workplace (de Lucas Ancillo et al., 2020).

Prior to the pandemic, the dominant outlook was that on-site offices and workplaces were vital to growth, community and talent attraction, where businesses bid intensely for first-class office spaces situated in major city centers around major world capitals, along with flexible, interactive and friendly office architecture as their key strategy. The pace and efficiency at which the modes of interactive collaboration have been embraced by organizations have been impressive because, in the majority of cases, outcomes have surpassed their expectations (de Lucas Ancillo et al., 2020).

Remote work has expanded exponentially due to the innovations that businesses have been able to provide to their workers, giving them more freedom to work both within and outside the workplace. Days after the outbreak of the pandemic, many companies were able to get more than 90% of their workers operating remotely. Any of the positions that may never have been thought of as being handled online, such as customer service, insurance agents, brokers, etc., have been able to operate successfully (de Lucas Ancillo et al., 2020).

Improving Value Propositions to Grow Revenue

Companies should revisit the collection of metrics used to track the success of their activities and their expenditure goals, since cutting costs or investing in the digital sector may be detrimental to the future of the business. It is therefore important to sustain investment in digitalisation by first developing measures that provide short-term assistance to workers, along with initiatives that provide future sales increases and/or cost reductions, primarily by improving business operations while minimizing wage or resource cuts (de Lucas Ancillo et al., 2020).

The results of COVID-19 make this category particularly significant in the future of the workplace, when businesses have to undergo a dramatic transition, this potential being the driver and accelerator of progress through digital transformation.

The workplace has embarked on a journey that goes beyond simple transition, where an accelerated process of change is being used to embrace digital enablers and to introduce strategies that optimize the resilience and innovation of its workforce and to pursue the most promising opportunities to recover from the crisis (de Lucas Ancillo et al., 2020). As the digital transformation process is now in place, the effects of COVID-19 make this category extremely important in the evolution of the workplace, as companies have to face a profound transformation, this opportunity becoming the catalyst and accelerator of change by digital transformation, where employees, companies and workplaces will inevitably become more agile and dynamic than before (de Lucas Ancillo et al., 2020).

Reshaping Work Practices to Benefit all Stakeholders

The COVID-19 pandemic highlighted the need to address the various technological challenges of the digital transformation process of companies that, along with the development of new technological enablers, such as artificial intelligence, 5G, blockchain, quantum computing or virtual reality, could have a significant impact on society as a whole and could continue to do so in the coming years., such as: (1) Technology infrastructure ready for ubiquitous remote operation; (2) Deployment of cloud ecosystems adapted to responsive mobile devices and data-driven decision-making organizations; (3) Acceleration of cyber security systems along with increased threat; (4) Hyperautomation, process robotization and commoditization of artificial intelligence solutions; (5) Collaborative work and learning platforms, fostering collaboration and imagination in organizations; (6) Customer-centric strategies for emerging interactive networks for the engagement and virtualization of experience; and (7) Significant growth in e-commerce platforms and contactless technology (de Lucas Ancillo et al., 2020).

Around the same time, it is important to adjust the corporate culture in order to promote resilience and teamwork, but considering the difficulty of predicting the future, top management would continuously need to consider all possible outcomes to have the necessary flexibility to deal quickly with any unforeseen situation that may arise in the future (de Lucas Ancillo et al., 2020).

RECOMMENDATIONS

The recommendations presented are based on examples of creativity, innovation and better education being provided to empower leaders to best deal with the devasting impact of the COVID-19 global pandemic.

Creativity

Creativity is a key element in the production and design of a product or service. This concept and production is predominantly engineering, with the process then marked by problem-recognition, analysis, imagination and technological problem-solving. Problem solvers are actually developers, who look at the problem, evaluate it, and then should offer creative solutions that better solve the problem, under the limitations of the current climate (e.g. COVID-19 lockdown conditions) (Schuelke-Leech, 2018).

Design engineering develops new and creative solutions to problems; determines the possibilities and limits of solutions and innovations. The sophistication and interconnectedness of the engineering structures ensures that the technical design and implementation is usually carried out by a team of engineers rather than by a single person (Schuelke-Leech, 2018). Because most engineers work for the private sector, most product research is carried out within existing corporations. This obviously means that this product and service creation can take place within the current strategies and markets of different companies (Schuelke-Leech, 2018).

It can be very difficult for businesses to produce goods and services that interfere with their current markets, which is why creative innovations mostly arrive from new firms on the market and at their peripheries (Schuelke-Leech, 2018). Engineers are specialists in the field of technical architecture, analysis of technical processes and resolution of technical problems. They may not necessarily comprehend human nature or the (sometimes unforeseen) contexts in which inventions may be used (Norman, 2013). They also ignore the socio-economic and political background in which their technical solutions reside. In other words, engineering designs and technology frequently neglect to understand the non-technical aspects that affect their service. This might lead to unexpected repercussions for innovations and designs (Schuelke-Leech, 2018). In fact, technological solutions intended to solve an existing challenge or disrupt a given industry will cause new problems; which then ironically require leaders to further generate even more creative solutions.

Innovation

COVID-19 has been celebrated as the "big equalizer," but the irony is that we are not as robust as society. Therefore, the rapid digital transformation brought about COVID-19 must be used fuel the next generation of innovators, both for economic and social reasons. Given the urgency of transformation beyond COVID-19, there is likely to be expanded foreign participation in delivering strategic financing programs that combine academia and industry to find the next transformative technology. Given the lack of structural strategies that expressly concentrate on DTs (Rowan

& Galanakis, 2020), this should be a focus field for policy makers and leaders to promote progress in their respective sectors.

In addition, Rowan and Galanakis (2020) argue that capitalizing on the introduction of new technologies could result in advances where goods are reduced in size (such as the exploitation of leading nanotechnology developments); lighter and more effective (such as the use of additive manufacturing and material science); more competitively and cost-effectively priced (such as resource utilization and manufacturing exploitation, including advancements in creative services and business processes) and more efficient goods and services; (such as exploiting physico-chemical developments combined with the use of robotics and AI for design linked to advances in education and workforce training).

Better Education

Public funding is a key component of the basic science required for emerging technology. Even Fortune 500 businesses depend heavily on public support for creativity, whether through intellectual capital preparation, public spending in R&D, or tax incentives for R&D. (Block and Keller, 2009). Interactions of capital, inventions, and localized opportunities result in far better educated engineers, innovators, and developers working to build innovative technology and services (Schuelke-Leech, 2018).

Governments must therefore play a vital role in their capital spending and procurement strategies. Public spending by government in education has a significant impact both on the supply of skilled labour and on their ability to acquire new experience and develop new skills (Schuelke-Leech, 2018). Governments can also have economic and policy requirements that enable businesses and individuals to carry out risks associated with the production of products and services, while providing a fair expectation of a financial return for taking risks. Broadband and cyber networks can be financed both commercially and collectively to provide an incentive for entrepreneurs to better educate themselves (Schuelke-Leech, 2018).

FUTURE AREAS OF RESEARCH

This chapter explored teaching how to work with people (in person and remotely) and technology (Artificial intelligence and robots) using creativity and innovation within the context of the new normal brought about by the current COVID-19 pandemic. Further research may be conducted to keep pace with the changing and disruptive technologies that are allowing organisations to attract, develop and manage talent whilst ensuring collaboration across the social distancing divide. The three

dimensions of the organisation presented in this chapter, namely: **work** (the what); the **workforce** (the who); and the **workplace** (the where) could also be quantitative evaluated by surveying organisations across different industry and sectors. Thus, the future of work could be explored further to establish universal truths; but also areas of difference that will vary significantly from one sector to another.

CONCLUSION

This chapter provided deep insights into effectively keep track of the nature of work, the workforce and the workplace in order to teach individuals and organisations on how to work with people (in person and remotely) and technology (Artificial intelligence and robots) using creativity and innovation. Furthermore, three approaches to leadership were also focused on - dispositional, relational and situational - to be able to identify and understand the new ways of working with people and the new technologies enabling work during the current global pandemic. Therefore, current and future leaders need to ascertain which leadership approach is best suited to stimulate creativity, innovation and better education in the post-pandemic era across their respective environments and industries.

REFERENCES

Assaf, A., & Scuderi, R. (2020). *COVID-19 and the recovery of the tourism industry*. Academic Press.

Autor, D. H. (2015). Why Are There Still So Many Jobs? The history and future of workplace automation. *The Journal of Economic Perspectives*, *29*(3), 3–30. doi:10.1257/jep.29.3.3

Block, F., & Keller, M. R. (2009). Where do innovations come from? Transformations in the US economy, 1970–2006. *Socio-economic Review*, *7*(3), 459–483. doi:10.1093er/mwp013

Capotescu, S. (2019). Ergonomics and the meaning of work. *IETI Transactions on Ergonomics and Safety*, *3*(2), 11–24.

de Lucas Ancillo, A., del Val Núñez, M. T., & Gavrila, S. G. (2020). *Workplace change within the COVID-19 context: a grounded theory approach*. Economic Research-Ekonomska Istraživanja.

Ely, R. J., & Thomas, D. A. (2001). Cultural diversity at work: The effects of diversity perspectives on work group processes and outcomes. *Administrative Science Quarterly*, *46*(2), 229–273. doi:10.2307/2667087

Frey, C. B., & Osborne, M. A. (2017). The future of employment: How susceptible are jobs to computerisation? *Technological Forecasting and Social Change*, *114*, 254–280. doi:10.1016/j.techfore.2016.08.019

Goos, M., & Manning, A. (2007). Lousy and lovely jobs: The rising polarization of work in Britain. *The Review of Economics and Statistics*, *89*(1), 118–133. doi:10.1162/rest.89.1.118

Hall, C. M., Scott, D., & Gössling, S. (2020). Pandemics, transformations and tourism: Be careful what you wish for. *Tourism Geographies*, *22*(3), 577–598. doi :10.1080/14616688.2020.1759131

Johnson, T., Smith, S., Ross, K., Yang, C., & Patterson, T. (2019). *A Calculated Transformation The actuarial workforce of the future can provide even more value to employers*. Available at: https://theactuarymagazine.org/a-calculated-transformation/

Kotze, D. M., Mouton, J., Barkhuizen, N., & de Jager, H. (2020). Talent Retention Of Educators In Selected Private Schools. *The International Journal Of Social Sciences And Humanity Studies*, *12*(2), 306–320.

Kuknor, S., & Bhattacharya, S. (2021). Organizational Inclusion and Leadership in Times of Global Crisis. *Australasian Accounting*. *Business and Finance Journal*, *15*(1), 93–112.

Mutch, C. (2020). *Crisis leadership: Evaluating our leadership approaches in the time of COVID-19*. Academic Press.

Naidoo, R., & Fisher, B. (2020). Reset sustainable development goals for a pandemic world. *NATNews*, *583*(7815), 198–201. doi:10.1038/d41586-020-01999-x PMID:32632244

Ngoc Su, D., Luc Tra, D., Thi Huynh, H. M., Nguyen, H. H. T., & O'Mahony, B. (2021). Enhancing resilience in the Covid-19 crisis: Lessons from human resource management practices in Vietnam. *Current Issues in Tourism*, 1–17. doi:10.1080/13683500.2020.1863930

Nilsson, M., Griggs, D., & Visbeck, M. (2016). Policy: Map the interactions between Sustainable Development Goals. *NATNews*, *534*(7607), 320–322. doi:10.1038/534320a PMID:27306173

Norman, D. (2013). *The design of everyday things: Revised and expanded edition*. Basic books.

Pless, N., & Maak, T. (2004). Building an inclusive diversity culture: Principles, processes and practice. *Journal of Business Ethics*, *54*(2), 129–147. doi:10.100710551-004-9465-8

Rotatori, D., Lee, E. J., & Sleeva, S. (2020). The evolution of the workforce during the fourth industrial revolution. *Human Resource Development International*, 1–12. doi:10.1080/13678868.2020.1767453

Rowan, N. J., & Galanakis, C. M. (2020). Unlocking challenges and opportunities presented by COVID-19 pandemic for cross-cutting disruption in agri-food and green deal innovations: Quo Vadis? *The Science of the Total Environment*, *748*, 141362. doi:10.1016/j.scitotenv.2020.141362 PMID:32823223

Schuelke-Leech, B. A. (2018). A model for understanding the orders of magnitude of disruptive technologies. *Technological Forecasting and Social Change*, *129*, 261–274. doi:10.1016/j.techfore.2017.09.033

Schwartz, J., Hagel, J., Wooll, M., & Monahan, K. (2019a). Reframing the Future of Work. *MIT Sloan Management Review*, *60*(3), 1–6.

Schwartz, J., Hatfield, S., Jones, R., & Anderson, S., (2019b). What is the future of work? *Redefining work, workforces, and workplaces. Part of A Deloitte Series on the Future of Work.*

Shim, M., & Yang, H. S. (2018). Interindustry wage differentials, technology adoption, and job polarization. *Journal of Economic Behavior & Organization*, *146*, 141–160. doi:10.1016/j.jebo.2017.11.014

Stankov, U., Filimonau, V., & Vujičić, M. D. (2020). A mindful shift: An opportunity for mindfulness-driven tourism in a post-pandemic world. *Tourism Geographies*, *22*(3), 703–712. doi:10.1080/14616688.2020.1768432

Talan, G., & Sharma, G. D. (2019). Doing well by doing good: A systematic review and research agenda for sustainable investment. *Sustainability*, *11*(2), 353. doi:10.3390u11020353

Yorks, L., Rotatori, D., Sung, S., & Justice, S. (2020). Workplace reflection in the Age of AI: Materiality, technology, and machines. *Advances in Developing Human Resources*, *22*(3), 308–319. doi:10.1177/1523422320927299

Chapter 8
Does Lower Income Affect the Development of One's Innovative Ability in the Education Niche

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ABSTRACT

The need of using creative and innovative education strategies in the low-income consumer setting has never been felt until this wake of the pandemic to assist for sustainable well-being. In this chapter, the role of improved education as a collective innovation measure in promoting awareness of the inclusive cover to the low-income consumers in the emerging countries will be perused in the wake of the 2019-nCoV virus in their struggle to cope with the unexpected management of risks in a more calculated way. The study provides the education challenges in the low-income insurance area posed to both consumers and providers and explains how their involvement is important through innovative programmes in the low-income cover niche such as digitalization amongst others. Since education indeed plays a huge role in enhancing participation in this field of low-income cover to entail sustainability, it will be wise that the policymakers, government officials, and others work closely with their consumers so that this problem can assist for sustainable livelihoods.

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INTRODUCTION

Innovative initiatives which are applied in different contexts reap different outcome/results. It is imperative to take into account the setting in which education is undertaken. For instance, it is important to note that some research scholars suggested that low-income people are at greater risk for poor academic skills than their higher-income peers in an inclusive insurance setting(Ripke & Huston, 2006). The development and growth through education of the low-income insurance sector of the financial services industry in emerging countries has proven to have an imperative bearing on a country's economic welfare and advancement. Innovation could assist to improve the quality of education in the low-income insurance niche market of developing countries. This chapter focuses on the innovation element in education segment of the low-income insurance sector of the financial services sector which is the inclusive cover area both from inside and outside the organization where microinsurance is an important segment. Innovation refers to as the implementation of not new ideas, knowledge and practices only but also of improved ideas, knowledge and practices (Kostoff, 2003; Mitchell, 2003). An important element of innovation known as collective innovation that supports the identification, evaluation, and implementation of new ideas outside the organisation by tapping online resources at each step of the process is known as collective innovation.

Before we identify and apply collective innovation measures in the inclusive insurance market, it is important to understand how the market works in this new midst of the pandemic, hence a snapshot is provided of the low-income market. The low-income niche of the insurance industry, an important segment has been a catalyst as the market has experienced a rapid growth in the developing nations of Asia, Africa and South America over the last ten years insuring lives from 135 million in 2009 to approximately 500 million (Magdas, 2020). The low-income households are more prone to unexpected risks and shocks. Their income is accordingly exposed to a bigger risk of disruption due to a situation that is beyond their control. Due to factors such as financial illiteracy, lack of education among others the low-income consumers cannot properly cope or manage risks that they are often exposed to. Several emerging and developing economies and markets have realized the potential of inclusive cover market in assisting potential consumers people with fluctuating income against death of members, diseases, natural disasters and accidents. Furthermore, the low-income market is recognized as a measure of providing financial means and security to assist low-income consumers to secure healthcare insurance (Qazi, 2021).

In this wake of the 2019-nCoV pandemic, the sector of low-income insurance market has taken its toll (Roy, 2021). Several waves generated by the pandemic has imposed many countries including South Africa to accordingly review their

policy objectives in an attempt to emphasise more on the innovative learning and teaching such as the the potential of technology supported learning and digitalisation in consumer education as being one of the essential aspects for a comprehensive solution to consumers protection in the low-income insurance market (National Treasury of South Africa, 2019).

The process of enhancing the understanding of investors the so-called "the consumer" by the providers in becoming aware of the products and services is known as consumer education. This includes giving out information on the attributes including pros and cons, pointing out the element of risks and challenges that can be posed by the products and services and also developing the confidence and skills of the consumers to make calculated choices for their well-being and welfare (The Organisation for Economic Co-operation and Development [OECD], 2019). This definition has also been adopted by the Association of Savings and Investments of South Africa and many other developing countries (Association for Savings and Investment South Africa [ASISA], 2013).

The low-income consumers are more prone to less insurance education and more vulnerable to risks and calamities(World Bank,2020). In December 2019, due to the identification at first point of the pandemic, the World Health Organization (WHO) put forward to the population in March 2020 of the global pandemic Covid-19 that it is acutely contagious and can have deadly consequences (World Health Organisation [WHO], 2020). While the low-income niche is mainly vulnerable to risks and perils resulting from the pandemic which are not within their control, the situation in this emerging market makes it even more challenging to handle. Approximately 75% percent of non-insured and 25% in emerging economies experienced interruption in their insurance activities (Worldometers, 2020). The Covid-19 pandemic, therefore, has had impacts on insurers' ability to launch new products, conclude sales, collect premiums, service customers and process and pay claims. Consequently, to ensure the continuity of microinsurance market, emergency remote education was put into practice in varying delivery modes as a measure to develop the low-income sector in an attempt to reach higher volumes of microinsurance intake on a sustainable basis (Habler, 2020).

The unexpected wicked Corona virus (2019-nCoV) has hit really hard and intruded on many spheres of our lives, particularly on education of low-income consumers in the low- income insurance industry of emerging countries. In this ever challenging time for everyone, learners have been deprived of learning and education and due to the living remoteness of consumers in a time when education was needed the most. The "how" to provide teaching and learning process has undergone many changes while consumers live remotely or out-of-reach from their providers of insurance. Emergency remote education is an aspect of education that one can use whether offline or online, using optimum resources at hand which is available in a sudden

occurring hardship as a measure to survive in a situation of crisis such as the present 2019-nCoV pandemic hitting hard on the low-income consumers which is more likely to be affected (Habler, 2020). The World Bank (2020a, 2020b) (highlighted that during the emergency remote education "failure is common, and success is often a result of experience and learning from past failures". Using technologies digitally can generate a consortium of capabilities for learning done remotely such as in the inclusive insurance niche in the current Covid-19 crisis.

To entail sustainability by nature of the environment that inclusive cover niche operates in, lack of financial education seems to be at the core of the lack of intake and the inability to manage risks by the low-income consumers. Thus, consumer training is more likely to generate a game changing situation to the market of inclusive insurance and low-income consumers and provide sustainability (Microinsurance Network, 2020; Xiao, 2018). However, as challenges kick in along the way in which education is provided in this wake of the pandemic, the importance of providing financial education is not anymore seen as a once-off provision but as a continuing activity that needs consistent awareness provided by providers of inclusive insurance on an online basis (Qazi, 2021).

The chapter kicks off by providing the background to the chapter. This will be followed by a discussion on the challenges related to the consumer education in the low-income insurance sector of developing markets. Section three highlights the issues of concern related to the interruption of consumer education in the midst of the pandemic. Section four highlights emerging different pedagogical approaches that are needed in the wake of this pandemic as a collective innovation process. This section provides recommendations based on the findings. Subsequently the future research directions of the study and a conclusion follow.

BACKGROUND

In this era of pandemic, there is widespread concern in developing countries with the expansion of insurance products to help manage significant risks. These concerns arise primarily from a lack of understanding of insurance products and services, failures of financial literacy and the need to use insurance products in order to keep costs down for low-income households. Insurance products are becoming increasingly complex to understand while simultaneously that decision-making is speeding up and taking place through digital channels. This raises serious concerns about the extent to which individuals understand the products and services and also the financial decisions they make.

The low-income households including the low-income entrepreneurs play an important role in the insurance industry as emerging market consumers and workforce.

Therefore, now even more than before the Covid-19 crisis began, insurers need to consider the needs of the low-income earners and how to better serve them. In 2020,a survey of 14,625 users from Policybazaar.com in India revealed that during this pandemic, both life and health insurance have become a keystone of good financial planning and it has increased awareness about insurance in India. The following figure highlights the importance of having insurance during the pandemic.

Table 1 below illustrates the perceptions about insurance in this era of Covid-19

Table 1. Perceptions about insurance

Scale	Percentage %
Very important	51%
Good to have	29%
Not sure	11%
Not important	9%
Total	100%

Survey from Policybazaar.com

Over half of the visitors of the insurance portal's website and application considered having insurance as very important and only 9 per cent did not consider it important even in the wake of Covid-19

By recognizing the multi-faceted roles and considerable market potential, insurers can create impact that goes far beyond insurers' top and bottom lines. In doing so, insurers will not only be able to improve access to insurance for a segment that has been traditionally underserved, but can also help reduce the widening of the insurance gap due to Covid-19. Through supporting opportunities to work from home, insurers will be able to attract a larger pool of talent capable of contributing significantly to industry growth. This, in turn, will support innovation, help improve resiliency to crisis, increase women's economic empowerment, and contribute to economic growth. In order to support small-scale entrepreneurs, insurers should provide resources that will help these women to access credit, manage cash flow, and enable their businesses to become more resilient. More broadly, insurers can provide customers with resources that build their knowledge about personal and business finance so that they feel empowered to make good decisions during this challenging period.

The field of inclusive insurance niche is perceived as a controversial issue since it is still at a preliminary stage of a low-income segment and leaving still room for improvement. Liaising with the policyholders and the government in

education in emerging countries are challenging to innovate (National Treasury of South Africa, 2019). On the other hand, it is perceived that providers of education such as insurers or intermediaries are ready to implement change. The system of education of a developing country faces serious problems which if left unresolved could lead to some education risks such as insurance illiteracy but also for such as economic growth and development, social progress and welfare. Since the mid-20th century, education systems have expanded enormously and populations have never been more highly educated than today, developing countries are now also relentlessly improving their financial education systems, seeing education as an indispensable ingredient of modernisation and progress. Indeed, the benefits to low-income households for more education is a wise move. Although policymakers may consider the continued expansion as one of the best innovative strategies, it may lead to important challenges. The next section focuses on the issues of concerns that could disrupt the well-functioning of the low-income insurance sector in the several waves of the pandemic.

Inclusive insurance is relatively a new sector that is still blurred and the future is still uncertain for this low-income insurance market. As research revealed the use and availability of technology is scarce in developing countries. As many insurers are still battling to become commercially profitable in this low-income insurance market to achieve sustainability. Due to the low premium charged to the low-income consumers and high operation costs involved, it is very challenging to achieve this sustainability (Chummun & Bisschoff, 2014). However, there is a big potential of large clientele in Africa waiting to be insured. More than 75% of the low-income market are still uninsured and this represents a huge gap of potential insurance business opportunities for the low-income insurance business in the African emerging market (Microinsurance Network, 2020). Inclusive insurance refers to " insurance that is accessed by the low-income population (also known as the mass market), provided by a number of different providers and managed in accordance with generally accepted insurance practices. It forms part of broader insurance market, distinguished by particular low-market market segment focus" (National Treasury of South Africa, 2019).

Although the number of low-income people covered by microinsurance in Africa doubled from 2014 to 2017, with 4.3 million insured at the end of 2017 out of the 15 million holders of microinsurance products (Worldometers, 2020), the insurance gap is still broad. The implementation of new microinsurance products is constantly developing. Governments, microfinance institutions, social businesses and other stakeholders engaged in combating poverty and designing social protection measures continue to view microinsurance as a key component of their toolbox. Yet, the inclusive niche market has experienced a loss hike from 25% in 2014 to 45% in 2020. Microinsurance accounted for less than 1.8% (for life) and 1.16%

(for general insurance, including property damage, accident and natural disasters) in India's broader insurance market in 2020 (Qazi, 2020). The reasons for the slow growth of microinsurance in the country include a long-standing lack of consumer awareness, education and understanding of insurance, an absence of need-based products customized to the low-income segment and cumbersome claims processes and procedures requiring extensive documentation and delays in disbursing claims (Qazi, 2021). Due to these issues and the failure of institutions to properly guide them, people often buy insurance policies without proper planning then give up before they are able to use their coverage because they do not have money to pay the premium, or because of the difficulty of navigating the claims process. Yet despite this awareness/education-driven issue, consumers educational outreach from insurance companies has remained very limited and it is an issue the industry must address.

An absence of insurance education being a huge challenge generates an opening to the providers to provide consumer education to the low-income consumers. According to a study made by Dror, Dalal & Matul (2012) if the consumers understand insurance terms and conditions, they are more likely to make a calculated decision. "In an environment where subjects are unfamiliar with formal insurance products, it may be difficult for potential clients to assess the benefits of such an investment" (DeBock & Gelade, 2012). Unlike loan services and savings, the complexities related to microinsurance can be challenging for the consumers to understand. Roy (2021) revealed that most consumers do not acquire cover because of lack of awareness and training challenges in this wake of the pandemic and highlighted that the pros of the low-income cover can only be reaped when they understand the product and or service. However, the question which arises is how to develop an understanding of insurance among the people who are uneducated and vulnerable? The most appropriate option would be through consumer education and skill development training that can substantially boost the demand for microinsurance which is more likely to lead to sustainability (Ghosh, 2020).

As much as the improved understanding of different risks by the consumers is more likely to enhance the knowledge of insurance terminologies and conditions of inclusive cover and seen as a useful tool to combat hardships (Dror, Dalal, & Matul, 2012), others authors have confirmed these findings too. Churchill & McCord (2012) while researching on low-cover found "education positively influenced participation for a newly offered risk mitigation instrument such as insurance". Qamar (2012) found out in an empirical research that there is a positive strong bearing between consumer education and possibility to subscribe to a microinsurance policy. Although important research findings have factored that lack of insurance education is one of the main causes of limited participation, other findings have not concluded how education should be offered in the low-income industry. There is a need to emphasize on emerging and developing economies as majority of the

potential inclusive insurance market exist in these countries and less public social support is available. However, the provision of insurance consumer education and skill development training have seen to be a hurdle that many stakeholders need to be accountable for. The following part of this paper will give an insight of the concerns that are encountered by the low-income households in this pandemic when offered the services of inclusive insurance education by the providers.

CHALLENGES IN THE LOW-INCOME INSURANCE EDUCATION PROVISION IN THIS ERA OF PANDEMIC

The 2019-nCoV pandemic has led to outstanding disruptions related to the operations of insurers in the developing countries as they still rely on the traditional ways of doing business which is mainly based on physical involvement and engagement for distribution between the insurer and the consumer. Due to the complete or partial lockdowns, curfews and social distancing measures, both consumers and insurers have found themselves in a very challenging situation to interact with each other relating to insurance businesses. The lack of insurance education has made it harder on the consumers in different spheres as follows:

Efficiency and Technology

One of the main problem insurance education is facing is mainly efficiency (OECD, 2019) . Efficiency relates to the balance between resources invested and the outcomes in terms of learners' performance. Over the past decades ever more resources have been invested in education. The average expenditure across OECD countries increased by no less than 17% between 2005 and 2013 in constant prices (OECD, 2019). The problem of efficiency in low-income insurance education is even more striking when education is compared with other public policy sectors, which have realised enormous productivity gains in past decades. Technology has been a major driver of increased productivity and efficiency with much improved outcomes even if the cost has also gone up in this wake of the pandemic. However, although technology has worked wonders for other sectors, it has not led to similar enhancement in the low-income insurance education sector.

Lack of Understanding/Misconception of Insurance Terms and Conditions

The lack of education faced by the low-income consumers has led to several low-income households consumers who honoured/paid their monthly premiums and

believed that their premium will cater for the allied perils and risks resulting from the Corona Virus pandemic. However, the consumers were disappointed when they were informed that their premiums do not cover the risks culminated from the pandemic (Gray & Wierchers, 2020). Some consumers even took the insurance providers to the court of justice . In March 2020, the Kenyan Insurance Regulatory Authority informed that the health-related Covid-19 claims would not be paid by the insurers although their initial agreement to pay the claims. Other insurers are also not honouring their promises to pay the Covid-19 related claims for medical invoices. In an era when the low-income consumers needed their providers to provide them with financial security and peace, they were deprived of such promises. Resultantly, a lot of microinsurance consumers have surrendered their policies due to mistrust that has been taken away from policyholders in the low-income inclusive niche market (Gray & Wierchers, 2020).

Digitalization Issues

The lack of education related to digitalization of the low-income consumers across the continent has emerged as a key barrier in the sub-Saharan African (SAA) insurance markets (Protazio, 2020). This has resulted in a significant slowdown in new sales and it became evident that challenges exist around remote onboarding and selling low-income insurance digitally (Microinsurance Network, 2020). The lack of internet facilities has also contributed to the reduction in sales.

High Cost of Inclusive Cover Policy

The pandemic has put a lot of pressures when it comes to sales. There has been an increase in the cost of administering and selling insurance (Roy, 2021). Inclusive cover is a "low ticket" business, requiring huge volumes to become sustainable. These volumes are hard to attain in emerging countries as the poor generally live in remote places with families scattered across often-isolated rural areas (Qazi, 2021). This makes physical access difficult and further increases costs, which are hard to pass on to consumers without pricing them accordingly. The transaction costs of issuing millions of small policies through service agents are also high. As a result, despite the potential of insurance products, uptake of microinsurance at market prices is extremely low and it has not been easy to scale it up except when heavily subsidized by the government which is very scarce in this era of Covid-19.

CHALLENGES: THE INTERRUPTION OF CONSUMER TEACHING AND LEARNING/EDUCATION IN THIS ERA OF CORONA VIRUS PANDEMIC

The low-income consumer market in developing countries remains severely underdeveloped due to the lack of awareness of the potential benefits of low-income insurance. Despite the obvious potential, there is great disparity between demand and supply of such service, this situation requires actions from government and private sector organizations to enhance understanding through financial education in this pandemic era. However, in this wake of the pandemic, the provision of education to low-income consumers is a challenging task and raises many issues of concern as follows:

Digitalization Divide

Due to strict levels of lockdown culminating from the pandemic, most providers of low-income products and services providers have been closed. Thus, the closure of activities has put pressure on the way that emergency remote education is conducted to the low-income learners. The lack of access to the internet, accessibility of data and devices to provide continuation of teaching and learning which is prevalent in the emerging economies has taken a big toll on the consumers to access their policies. The radical shift to online access has probed into the digital divide among those who have access to internet infrastructure, data-related devices, electricity and those who do not. A study revealed that in 2020, 39.6% of the African population have internet facilities while 87.7% Europeans and 95% of North Americans have got the facilities (Internet World Statistics, 2020). Even where access is present, inequalities rule with bandwidth sharing and distribution, speed of the internet and data costs. Some other demographical factors also are considered when it comes to access of internet facilities such as gender, professional status, age, income range and living standard measure (Rohs, & Ganz, 2015). Due to pressures coming from the learners, some initiatives have been taken by the government to provide free online teaching and they have been in continuous touch with these internet providers. For instance, in South Africa, big providers such as MTN and Vodacom have assisted the education providers and low-income insurance ones (McBurnie et al., 2020). As much as these facilities can remove costs of data, learners still need to own a smart phone with the required features that are compatible with the digital services offered. Furthermore, it is important to have electricity which is often a problem in developing countries such as South Africa and other African countries which have severe load-shedding problems.

Anxiety and Pressure

It is a fact that the Corona virus pandemic has affected mostly the emerging economies business activities and the low-income households mainly reside in the developing countries. The pandemic has largely affected the low-income consumers both emotionally and psychologically (Miller, 2020). Due to the pandemic both learners and providers of consumers education have been seen as anxious and apprehended due to absence of awareness related to their respective policies and business activities. As much as they find self-isolation, quarantine and lockdown days regularly challenging they also have the need to connect and keep abreast with their insurers. As the low-income insurance consumers remain more vulnerable in this pandemic, their main focus is on their financial family responsibilities and their financial well-being too. Thus, they are more likely to be apprehended and anxious concerning the safety and health issues of their immediate close relatives and their own welfare (Jansen 2020).

Gender Challenges

Since women gender is known to have more ongoing small related low-income businesses in emerging countries and microinsurance policies, they are more likely to be exposed to the infectious pandemic (Mutavati, Zaman, & Olajide, 2020). In this pandemic, many women living in the emerging countries have reported an increase in sexual and domestic violence. A study conducted in times of the Corona virus pandemic showed that women education even being held online was stopped due to exploitation, increased, teenage pregnancies, gender-based violence, child labour and other types of abuse against teenage girls (Bandiera et al., 2019). According to a study made by the Global Partnership for Education in 2020, it was related that "the impact of Covid-19 on adolescent girls is likely to surpass that caused by the Ebola epidemic."

The gender-based violence and sexual abuse in this wake of Covid-19 have affected women more than men especially single mothers and the female bread-winners in the emerging countries (Medina & Lerer, 2020). These issues of concern have been extended to other developing countries where the careers of women in their respective low-income businesses have been impacted in terms of their learning to advance further (Medina & Lerer, 2020)

Surveillance and Privacy Data Concerns

As much as consumers education has seen to exponentially migrate online, the learners are deprived of options to move to other platforms on signing up. At times

the online system has restrictions when it comes to their history or footprint they leave behind digitally. This is supported by a study made by Khalil, Prinsloo, and Slade (2018) for the users who cannot decline some user agreements. Amongst is found their data that they use to access the system. The users and their respective data are at times are at risk which is identified, discovered, analysed and at times sold to third party organisations without their consent(Prinsloo, Slade, & Khalil, 2019; Kerres, 2020).

In emerging markets where there is likely to have lenient cybersecurity checks on user data, those raw materials can be leaked or hacked by bombers that exhibit inappropriate messages (such as in the case of Zoom). The low-income people are not even aware of these leaks due to their lack of education and literacy on the microinsurance products and services (Davey, 2020). Virtual security and safety have been an area of concern where the low-income consumers need training and skills to be developed on these issues (Manskar, 2020).

RECOMMENDATIONS: SOME COLLECTIVE INNOVATION MEASURES HOW INSURANCE EDUCATION OF LOW-INCOME CONSUMERS CAN BE PROVIDED IN THIS PANDEMIC

Since many of the problems happening in the low-income sector are becoming more complex, we must also accordingly adjust the way we deal with those challenges in an innovative way. The need to apply collective innovation is much needed in this market nowadays to deal with the wicked problem as the different waves of the 2019-nCoV pandemic rocked its way. Therefore one needs the input and assistance from different parties in due time as time goes by gradually but surely rather than spot on the solution upfront.

As much as stakeholders have reduced the activities of the low-income insurance sector of developing countries around the world, many stakeholders have seen that the pandemic has got the potential to assist awareness through creativity and innovation in education in the emerging markets. For instance, in India the low-income consumers currently understand its importance to their lives (Qazi 2021). Although sales of policies have reduced in this challenging time, the increased awareness and knowledge provided by different stakeholders in the sector are foreseen to spur a bigger demand for the inclusive insurance in the near future. The emergence of new product distribution channels such as e-commerce which is used by 12% of insurers is also worth mentioning and has great potential for expansion (Microinsurance Network, 2020). Digital innovations have the ability to unlock new insurance markets, especially in Africa where the potential is largely untapped (Deloitte, 2017). Innovative businesses tailor their customer engagement, distribution,

and payment methods, as well as pricing and premium structures, to the demands and conditions of low-income customers, so too should digital channels be geared towards innovative and creative consumer education as a collective.

Online Insurance Education Campaigns

Due to this lack of education relating to the low-income consumers about opting for the most appropriate insurance product in a secure manner, many stakeholders in the low-income insurance industry together with the government and insurance associations have commenced introducing topics and modules by creating them for insurance education programmes and hand out to the consumers in generating campaigns online in this wake of the pandemic. Prior to the pandemic face-to-face interaction meetings were preferred as a means of active learning and teaching in the low-income insurance sector (Bel & Caicedo, 2013; Dzansi, 2012). However, due to the curfews and lockdown, the insurers and the consumers have preferred the remote online education. In South Africa approximately more than 75% of the low-income households are still excluded from insurance services. In an attempt to financially include the consumers, the providers have felt the urgent need to enhance insurance education and educate the wide audience who are financially excluded (Llyods 2020).

Since the face-to-face option cannot be in operation at present due to social distancing measures or protocols put in place, many providers of microinsurance have started adding social media activities such as video programmes and games cartoons videos etc. to their online education campaigns in an attempt to reach more financially-excluded audience online.

Social Media

It's not about the tools and channels — the software or technology — in social media; it's about what individuals do with the technology, software, tools, and channels: interacting in the workplace, sharing photos and videos, writing product evaluations, gathering material, reconnecting with old friends, sharing with new friends (Holloman, 2012). As a catalyst for effective communication and engagement among individuals and groups, social media is an ideal partner for assisting insurance businesses in improving their interaction and personal connection with consumers. In this role, social media is used as a tool other than for advertising and marketing purposes. In 2013, Accenture conducted an innovation survey on consumer engagement and the relationship with insurance purchase considerations. The results revealed that close to 50% of the 6 000 participants across 11 countries stated they would take social media comments and recommendations from friends, family and even

strangers from relevant social media groups into account when deciding on insurance purchases (Accenture, 2013). Indicating that social media is a powerful tool to spark conversation, insight, leaning and virtual word-of-mouth which are all elements that are key in a non-intrusive learning process. Social media has become an additional source of advice and research platform, therefore the ideal fold to facilitate learning. This indirect use of social media as a learning tool to microinsurance education is a creative twist on the typical uses of social media. Facebook and Twitter, for example, have become as much a part of everyday life just as much as mobile phones. There are low barriers and costs associated with accessing the platforms. The biggest advantage is that information that is clear, concise, creative and well packaged can be shared and re-shared with ease among consumers and potential consumers, it is retained on a permanent basis, unless deleted, and the information remains available, for those interested to consume and engage it at a time most convenient for them.

Audio Visual Media Active Teaching and Learning

The audio visual media as a measure of active teaching and learning should be strongly factored in the way of educating the low-income consumers in the developing countries. In most emerging countries, the lifestyle of audio visual media has been seen as a means of useful source of news and information. Many low-income households view the tools of audio visual not only as entertaining but educating (Ward, 2010). For instance, a radio is easily portable and can be carried anywhere like a cell phone in any setting and updated news and adverts on different channels are easily accessible and convenient (Watson, 2020).

One of the main pros of audio visual way of teaching and learning is that the insurers can easily convey the online messages of mass media campaigns to low-income consumers who do not actively look for financial education (Bel & Caicedo, 2013). Platforms like YouTube offer great opportunities to relay messages and run educational campaign. Evidence suggests that audience react to different cues when it comes to YouTube videos and the features that attract then to a particular video. Rodriguez (2017) finds these cues to be difference based in education, occupation, and ethnicity. Therefore, insight on the target audience is key in order to have develop creative content that will grab attention and effect learning outcomes. The respective videos can also be shared via instant messaging platforms like WhatsApp increasing the prospects of reach and subsequent learning.

Since classroom physical-based training is no longer accessible in this wake of the pandemic, audio visual can easily reach out to the audience who do not have internet facilities. There is a high potential that the channels of audio visual media can achieve the required uptake of microinsurance policies. Furthermore, the providers can conduct training and literacy workshops taking into account the cost factor

component to a remote setting-based learners faced with lack of insurance education on a sustainable basis. For instance, the current digital shift of microinsurance companies and their allied campaigns can reduce the transaction cost of physically reaching out to the consumers (Sibbald, 2020).

The cost effectiveness of the audio visual campaign can only be achieved by the number of learners (viewers and or listeners). Although there is a big buzz to create large-scale active teaching and learning through audio visual campaigns by providers of microinsurance, the low-income market views two limitations related to the approach (Tower and McGuiness, 2011). It is very costly to set up a new audio visual campaign from scratch and there is not enough evidence that the audience will definitely join the microinsurance schemes although they can attend the campaign being held online. The insurers also do not have any guarantee that their campaigns can increase the uptake of policies. Thus, audio visual which a form of mass media can only generate some positive revisions related to literacy modules on insurance, and skills (Watson, 2020).

Online Discussions: Active Teaching and Learning

Prior to the pandemic, face-to-face discussions between the consumer and provider used to be a major teaching strategy as more instant understanding was seen to be an advantage (Bligh, 2000; Burgan, 2006). Many consumers have highlighted the advantages of brainstorming and discussion to be a measure of active teaching and learning. Several studies have revealed that face-to-face discussions enhance teaching and learning technique which is coupled with lateral, co-operative and innovative thinking (Bender, 2003). Garside (1996: 215) argued that the mode of active learning is related to the development of discussions and critical thinking skills is one of the biggest active teaching and learning strategies where learners "elaborate, defend, and extend their positions, opinions, and beliefs".

However, in this period of the pandemic, the face-to-face discussions which used to promote cooperative instant learning in an attempt to assist the learners to grasp the hands-out materials and notes better (Garside 1996: 219). In a study, it was found that the discussions used to yield better understanding benefits especially where there were more complex terms and conditions to be learnt on the agenda (Gardside 1996: 212). Nowadays the similar technique can be used but online in this era of digital shift, however has got some challenges such as consumers found it more expensive to buy mobile data to receive the online discussions on Zoom or Ms Teams (Ferreira et al., 2020). However, some consumers put forward that the online discussions are more of a time-saving component compared to face-to-face discussions which used to be more time consuming. The online learner-to-learner involvement should be strongly anchored as it is known to have a more profound

effect on the understanding of their peers. The discussions among peers (in this chapter, the low-income consumers) do "not necessarily lead them to what they are supposed to know" since the consumers might be limited in terms of knowledge to achieve the required learning outcome. The providers of insurance education in an attempt to promote active teaching and learning should also follow other previous education trends research findings and cope with the different challenges but on an online front. For instance, any discussion on an insurance topic that will improving learners' mastery and the problem-solving ability of the low-income consumers should be incurred in the online campaigns by the providers.

Other challenges could involve that while the providers may be interested to provide and offer the online lectures and online discussions, there is a possibility that at times some classrooms 'environments may make meaningful online discussions difficult. For instance, Magdas (2020) pointed out that the challenges that providers face is when there is a big online audience who are ready for online dialogue and discussions on the topic. The large group discussion can be hectic to manage and one way of dealing with this challenge is to break the big class into small classes in an attempt to promote team learning from peers (small group discussions). This can be derived from a study on small groups creation to provide cooperative team learning and both peer instructions through small group discussions and large group discussions that can "lead to improvements in learners' conceptual understanding" (Occhipinti, 2003).

Persuasive Communications

Persuasive communications which is a measure of promotional attempt is also one the insurer marketing activities consumer financial education (Lee & Kotler, 2012). Promotion relates to "all means through which a firm communicates the benefits and values of its products and services and persuades targeted consumers to buy them" (Lee & Kotler, 2012). In the African countries, the insurance sector hardly has a coordinated and standard promotion branding in a view to position the inclusive microinsurance products and services for its audience (Ferreira et al., 2020). The 2020 FinMark Trust which studied usage and awareness of financial products and services in South Africa revealed that the brand recognition of Zimele in South Africa was negligible. That was one of the main causes behind the absence of the brand visibility in the insurance market. The way a provider of microinsurance designs suitable promotion strategies and implements them through consumer education and literacy of the product and or service should be the main priority for the providers of insurance to improve insurance education. For instance, two main projects have been considered lately in this wake of the pandemic by the ASISA programme:

The Workshops of Communities campaign: This campaign comprises of training and insurance education sessions which are tailor-made to low-income earners and communities on microinsurance in the Republic of South Africa.

Comutanet Awareness campaign: This campaign relates to low-income people in South Africa who mainly travel by common transport mediums. In this campaign, the commuters or passengers will be exposed to different training and literacy workshops on microinsurance through channels of communication located at train station, bus stations and taxi ranks.

Remote Onboarding Teaching and Learning

Operational challenges faced by insurers include the inability to go to work and receive paper documents, which in a market that depends heavily on paper-based systems, affected claims processing and caused significant delays. It is high time to rethink that a digital shift is a must in the low-income inclusive insurance industry although illiteracy and lack of consumer education prevail in the immediate and near future (Protazio, 2020). As much as online digitalization rules the way in the microinsurance industry at present, some insurers think that brick-and-mortar operations will return to usual once lockdown came to an end. However, the majority of licensees are of the view that digitalisation will continue and spread across more components of their businesses in the next five years, with many of them already moving to online engagements with customers. There is a school of thought that reliance on brick-and-mortar head office and branches networks has been the Achilles heel that limits the capacity of established insurance providers to lower service costs and expand their reach in the microinsurance segment. This is because maintaining physical presence necessitate significant extra expenditures that are loaded to policies making insurance more expensive (Deloitte, 2017). Therefore, active teaching and learning should occur on the topic of online boarding and digitalization as a way to reduce the cost base of insurers and limit reliance on physical networks. The question which arises relates to what types of learning and skills in this wake of the pandemic when most of the transactions are digitalized and are required by the providers in an attempt to optimise data use so as to make calculated decisions since digitalization is related to data or raw materials:

According to Kuhlcke (2020) the following skills training and learning are required:

- Data discovery: First and foremost, the provider of the product/service should train and educate the staff on how to deal closely with small or large amount of dataset. This will enable them to identify, process them so that it can be analysed in a manner that respects the privacy of customers and citizens.

- Policy fluency: It is important to understand what questions the provider must ask with the given sets of data in hand or what data the staff needs for them to reply properly to those important questions. One should expect any policymaker to ask any question as it is their rights and the data users and staff should be able to reply to those questions and able to interpret the policy even if the data is absent. This is a skill that all providers and regulators should develop in the wake of the pandemic to know the policy terms and conditions.
- Science of data: The employees with large advanced datasets requires data science knowledge and training skills to work with any type of dataset. These skills should be developed and refined among policymakers to some extent.
- Interpreting "data answers" into practical policy measures relates to discovering and assessing mobile money financial or insurance transaction data to be able factor the amendments in transaction costs or fees. If a staff identifies a particular behaviour change following a price change, more research needs to be undertaken. Similarly, in the private sector some providers such as the insurance have been facing challenges with high transaction fees. Therefore, they should be trained and educated in this angle too.

A study made recently identified three key steps that the industry needs to take to enable remote onboarding (Ferreira et al., 2020). Firstly, educating consumers on enabling digital contracting, both within regulation and making sure that insurers' internal systems are able to onboard customers remotely. Secondly, teaching the consumers on enabling customer due diligence/know-your-customer that allows remote onboarding of customers which involves collecting and verifying identify information electronically and remotely. Third and lastly, the active training of digital behaviour in the consumer's market and ensuring that consumers are able and willing to engage digitally online should be focused on by the providers. By slashing or eliminating fees on money transfers during the lockdown period, digital payments can compete with cash (Rinehart-Smit & van Vuuren, 2021). Although the sustainability of this approach remains to be seen given the sacrifice in fee revenue required from mobile money operators, it provides an on-ramp for the use of digital financial services by those who would otherwise have used cash . Cash-outs from mobile wallets have also decreased sharply since the lockdown started, and are now less than half of their prior to the pandemic values meaning more subscribers are using digital value and are more educated on its benefits. However, the stakeholders will have to wait for the post-Covid-19 data to determine if these behaviours are permanent or short- term.

FUTURE RESEARCH DIRECTIONS

The unexpected hit of the several waves of the 2019-nCoV pandemic is continuously imposing strict protocols such as curfews, social distancing protocols among others and also new ways of doing insurance business in the low-income insurance market of developing countries . These changes are impacting on the stakeholders of the insurance industry who found themselves not very educated to handle those new changes; the government, associations, industry, regulators, providers and the low-income consumers at large. The lack of education prevalent in the low-income insurance sector needs redress for the microinsurance industry to be the game changer for the low-income emerging markets . It is imperative that the government and other stakeholders find new ways of identifying the low-income consumers or potential ones and teach them/educate them on the new processes and systems such as digitalization and online boarding on a remote basis. This is a very challenging task for the providers to educate online the consumers on several angles and a complete list of items for instance, the challenges of remote online onboarding. Furthermore, the insurers have an immense task to ensure that the messages through training and education are being conveyed properly to the low-income market existing consumers and potential ones. Thus, the government and other providers can factor those mentioned aspects of active teaching and learning to create and innovate participation and uptake in the low-income insurance market with the objective of driving sustainability in developing countries and that still leave room for future stage of research.

CONCLUSION

This chapter provides an overview of the creative and innovative ways of providing active teaching and learning through consumer education in the low-income cover market of the emerging and developing countries in the wake of the 2019-nCoV pandemic. The need to apply creativity and innovation in the low-household/ consumers education has never been felt until today in this wake of the pandemic and this has been discussed in section two of this chapter. Furthermore, the challenges such as anxiety, data concerns and ethics, gender issues, digitalization divide which are associated with the interruption of education has been taken into consideration in section three. It is a fact that the whole landscape or industry of the low-income consumers market has been affected as a whole across the world. However, as much as the effects are felt by many stakeholders in the developing insurance market, some providers are of opinion that it could be the next revolution in the financial services industry to promote financial inclusion of the low-income households. This is due

to the new methods of digitalization and online engagements to promote remote online education in the low-income insurance markets which can decrease operations and transaction costs unlike face-to-face discussions and involvement. In this era of 2019-nCoV, the ongoing pandemic is continuously generating acute human pain across the emerging economies where the low-income households are more vulnerable to hardships and their respective income. The wicked pandemic and its disruptions tend to continue with the several waves that have been recorded already, at least for some time ahead and educating/training the low-income niche market can increase uptake and promote sustainability in the low-income cover market. Investing some efforts and deploying a new mindset of educating the low-insurance households online from different angles can be a challenging task for the providers and this requires speedy creative innovative active learning and teaching strategies in the context that both the consumers and the providersoperate. Finally, the author provides some insightful recommendations relating to some collective innovation measures that can be used to actively teach and educate the low-income earners in the low-income insurance market of the emerging and developing economies. For example, the use of social media can close the gap of infrequent interaction between providers, consumers and other prospective users. The recommendations provided are taken from different parties inside and outside the market. These means and measures are more likely to be a win-win situation for both providers and consumers in the wake of the proven-wicked issue of the 2019-nCoV pandemic.

REFERENCES

Accenture. (2013). *The digital insurer unleashing the potential of social media in insurance*. Retrieved June 22, 2021, from https://insuranceblog.accenture.com/wp-content/uploads/2018/07/Insight-unleashing-potential-social-media-insurance-POV.pdf

Asokan, M. (2020). *Changing perception about insurance in India from Policybazaar.com*. Retrieved June 22, 2021, from https://timesofindia.indiatimes.com/business/india-business/survey-finds-changing-perception-on-insurance-in-india/articleshow/70001916.cms

Association for Savings and Investment South Africa. (2013) *Research and Publications*. Retrieved May 13, 2021, from https://www.asisa.co.za/index.php/en/research-publication

Bandiera, O., Buehren, N., Goldstein, M. P., Rasul, I., & Smurra, A. (2019). The economic lives of young women in the time of Ebola: lessons from an empowerment program. WPS8760, The World Bank. doi:10.1596/1813-9450-8760

Bel, S., & Caicedo, M. P. (2013). Audiovisual Mass Media Campaigns for Insurance Education: Stages and lessons. International Labour Organisation.

Bender, T. (2003). Discussion-Based Online Teaching to Enhance Student-Learning. *Stylus*.

Bligh, D. A. (2000). *What's the Use of Lectures?* Jossey-Bass.

Bozkurt, A. (2019). Intellectual roots of distance education: A progressive knowledge domain analysis. *Distance Education*, *40*(4), 497–514. doi:10.1080/01587919.2019.1681894

Burgan, M. (2006). In Defense of Lecturing. *Journal of Change*, *38*(6), 30–34. doi:10.3200/CHNG.38.6.30-34

Chummun, B. Z., & Bisschoff, C. A. (2014). A theoretical model to measure the business success of Microinsurance in South Africa. *Journal of Economics*, *5*(1), 87–96. doi:10.1080/09765239.2014.11884987

Churchill, C., & McCord, M. J. (2012). Current trends in microinsurance. In Protecting the Poor: A Microinsurance Compendium. International Labour Organisation.

Davey, W. (2020). *Zoom Gets Stuffed: Here's How Hackers Got Hold Of 500,000 Passwords.* Forbes. Retrieved May 07, 2021, from https://www.forbes.com/sites/daveywinder/2020/04/28/zoom-gets-stuffed-heres-how-hackers-got-hold-of-500000-passwords/

DeBock, O., & Gelade, W. (2012). *The Demand for Microinsurance: A Literature Review.* International Labour Organization. Research paper.

Deloitte. (2017). *Unlocking new markets: Digital innovation in Africa's insurance industry*. Retrieved June 22, 2021, from https://www2.deloitte.com/content/dam/Deloitte/za/Documents/financial-services/za_Digital-Insurance-101017.pdf

Dror, I. Dalal, A., & Matul, M. (2012). Emerging practices in consumer education on risk management and insurance. *Journal of Risk and Insurance Economics*, *66*(1), 3–9.

Dzansi, A. D. (2012). Insurance awareness through movies: an appraisal of the Kora wo Daakye movie in selected communities in Ghana. Microinsurance paper, International Labour Organisation.

Ferreira, M., Cooper, B., Gray, J., & Schlemmer, L. (2020). *Onboarding challenges*. Retrieved March 07, 2021, from https://cenfri.org/articles/insurance-operations-and-covid-19-remote-onboarding-challenges/

Garside, C. (1996). Look who's talking: A comparison of lecture and group discussion teaching strategies in developing critical thinking skills. *Journal of Communication Education*, *45*(3), 212–227. doi:10.1080/03634529609379050

Ghosh, A. (2020). *Impact of Global Financial Crisis in the Life Insurance in India.* Retrieved March 07, 2021, http://ssrn.com/abstract=1639122

Gray, J., & Wiechers, T. (2020). *Africa's insurance fails to deliver on COVID-19.* Retrieved March 07, 2021, from https://cenfri.org/articles/africas-insurance-fails-to-deliver-on-covid-19/

HablerB. (2020). Continue or reboot? Overarching options for education responses to COVID-19 in low and middle-income countries. Zenodo. doi:10.5281/zenodo.3753513

Hollowman, C. (2012). *The social media MBA: Your Competitive Edge in Social Media Strategy Development & Delivery. West Essex*. John Wiley & Sons Ltd.

Internet World Statistics. (2020). *World Internet Users and 2020 Population Stats.* Retrieved April 23, 2021, from https://www.internetworldstats.com/stats2.htm

Jansen, J. (2020). *Let's face facts, the 2020 school year is lost. So what to do?* Retrieved March 07, 2021, from https://select.timeslive.co.za/ideas/2020-04-09-lets-face-facts-the-2020-school-year-is-lost-so-what-to-do/

Jung, I. (2019). *Introduction to theories of open and distance education. In Open and distance theory revisited: Implications for the digital era*. Springer. doi:10.1007/978-981-13-7740-2

Kerres, M. (2020). Against All Odds: Education in Germany Coping with Covid-19. *Postdigital Science and Education*, *1-5*(3), 690–694. Advance online publication. doi:10.100742438-020-00130-7

Khalil, M., Prinsloo, P., & Slade, S. (2018). User Consent in MOOCs – Micro, Meso, and Macro Perspectives. *International Review of Research in Open and Distributed Learning*, *19*(5). Advance online publication. doi:10.19173/irrodl.v19i5.3908

Kuhlcke, K. (2020). *Data in real time: How digitalisation is transforming financial policies in Africa.* Retrieved March 07, 2021, from https://cenfri.org/interviews/data-in-real-time-how-digitalisation-is-transforming-financial-policies-in-africa/

Lee, N. R., & Kotler, P. (2012). *Social Marketing* (4th ed.). Sage Publications.

Llyods. (2020). *Microinsurance on the Roadmap to Financial Inclusion.* Retrieved March 07, 2021, from https://www.lloyds.com/news-and-insight/risk-insight/reports/microinsurance/insurance-in-developing-countries

Magdas, A. (2020). *Microinsurance on the Roadmap to Financial Inclusion.* Retrieved March 07, 2021, from https://www.centerforfinancialinclusion.org/microinsurance-on-the-road-map-to-financial-inclusion

McBurnieC.AdamT.KayeT.HablerB. (2020). Zero-rating educational content in low and middle-income countries [The EdTech Hub Helpdesk Response]. doi:10.5281/zenodo.3784940

Medina, J., & Lerer, L. (2020). *When Mom's Zoom Meeting Is the One That Has to Wait.* Retrieved March 07, 2021, from https://www.nytimes.com/2020/04/22/us/politics/women-coronavirus-2020.html

Microinsurance Network. (2020). *Facts on Microinsurance.* Retrieved March 07, 2021, from https://microinsurancenetwork.org/

Miller, E. D. (2020). The COVID-19 Pandemic Crisis: The Loss and Trauma Event of Our Time. *Journal of Loss and Trauma*, *25*(6-7), 1–13. doi:10.1080/15325024.2020.1759217

Mutavati, A., Zaman, M., & Olajide, D. (2020, April 27). *Fighting the 'shadow pandemic' of violence against women & children during COVID-19.* Africa Renewal. Retrieved March 07, 2021, from https://www.un.org/africarenewal/web-features/coronavirus/fighting-%E2%80%98shadow-pandemic%E2%80%99-violence-against-women-children-during-covid-19

National Treasury of South Africa. (2019). *The South African Microinsurance Regulatory Framework Report*. Retrieved May 07, 2021, from http://www.treasury.gov.za

Occhipinti, J. D. (2003). Active and accountable: Teaching comparative politics using cooperative team learning. *Journal of Political Science and Politics*, *36*(2), 69–74. doi:10.1017/S1049096503001719

Organisation for Economic Co-operation and Development. (2019). *Education at a Glance 2019: OECD indicators*. OECD Publishing. doi:10.1787/f8d7880d-

Protazio, S. (2020). Retrieved March 07, 2021, from https://cenfri.org/articles/opportunities-and-challenges-to-innovation-in-the-ugandan-insurance-market/

Qamar, M. A. (2012). *The Role of Microfinance in Reducing Vulnerability: The Case of District Rajanpur, Punjab, Pakistan* (Unpublished doctoral thesis). University of Gloucestershire.

Qazi, M. (2021). *Launching India's Microinsurance Revolution: How the Sector Can Build Upon Growing Customer Awareness Due to COVID-19.* Retrieved March 07, 2021, from https://nextbillion.net/india-microinsurance-covid-19/

Rinehart-Smit, K., & van Vuuren, J. P. (2021). *Covid-19 catalyses insurance innovation*. Retrieved March 07, 2021, from https://cenfri.org/articles/covid-19-catalyses-insurance-innovation

Ripke, M., & Huston, A. C. (2006). Poverty: Consequences for children. In L. Balter & C. Tamis-LeMonda (Eds.), *Child psychology: A handbook of contemporary issues* (Vol. 2, pp. 521–544). Psychology Press.

Rodriguez, P. R. (2017). *Effectiveness of YouTube Advertising: A Study of Audience Analysis* (Thesis). Rochester Institute of Technology.

Rohs, M., & Ganz, M. (2015). MOOCs and the claim of education for all: A disillusion by empirical data. *International Review of Research in Open and Distance Learning*, *16*(6). Advance online publication. doi:10.19173/irrodl.v16i6.2033

Roy, A. (2021). *Microinsurance role and issues during the covid-19 crisis.* Retrieved March 07, 2021, from https://www.magzter.com/stories/Business/The-Management-Accountant/Micro-Insurance-Role-And-Issues-During-The-Covid-19-Crisis

Russell, T. L. (1999). *The no significant difference phenomenon: As reported in 355 research reports, summaries and papers*. North Carolina State University.

Sibbald, R. (2020). *Exploring the current digital shift in SA's insurance industry.* Retrieved March 07, 2021, from https://www.striata.com/resources/reading-room/the-current-digital-shift-in-insurance/

The World Bank. (2020a). *Remote Learning and COVID-19: The use of educational technologies at scale across an education system as a result of massive school closings in response to the COVID-19 pandemic to enable distance education and online learning*. Retrieved March 24, 2021, from https://documents.worldbank.org/curated/en/266811584657843186/pdf/Rapid-Response-Briefing-Note-Remote-Learning-and-COVID-19-Outbreak.pdf

The World Bank. (2020b). *Guidance Note: Remote Learning & COVID-19.* Retrieved March 27, 2021, from https://documents.worldbank.org/curated/en/531681585957264427/pdf/Guidance-Note-on-Remote-Learning-and-COVID-19.pdf

Tower, C., & McGuinness, E. (2011). *A Friend Indeed: Evaluation of an Insurance Education Radio Campaign in Kenya*. Microfinance Opportunities Publications.

United Nations Educational, Scientific and Cultural Organization. (2020). *COVID-19 Educational disruption and response*. Retrieved March 07, 2021, from https://en.unesco.org/covid19/educationresponse

Ward, D. (2010). Manual for participatory radio campaigns: Revised manual for the programming stages of AFRRI participatory radio campaign number two. African Farm Radio Research Initiative (AFRRI), Farm Radio International.

Watson, J. (2020). *Learning through television in low-income contexts: Mitigating the impact of coronavirus (COVID-19).* The EdTech Hub. Retrieved March 07, 2021, from https://edtechhub.org/2020/03/31/learning-through-television-in-low-income-contexts-mitigating-the-impact-of-covid-19/

World Bank. (2020). *COVID-19 (coronavirus) drives Sub-Saharan Africa toward first recession in 25 years.* Retrieved March 19, 2021, from https://www.worldbank.org/en/news/press-release/2020/04/09/covid-19-coronavirus-drives-sub-saharan-africa-toward-first-recession-in-25-years

World Health Organization. (2020). *Coronavirus disease (COVID-19) Pandemic.* World Health Organization. Retrieved May 03, 2021, from https://www.who.int/emergencies/diseases/novel-coronavirus-2019

Worldometers. (2020). *Coronavirus cases.* Retrieved September 18, 2020, from https://www.worldometers.info/coronavirus/country/south-africa/

Xiao, J. (2018). On the margins or at the center? Distance education in higher education. *Distance Education*, *39*(2), 259–274. doi:10.1080/01587919.2018.1429213

KEY TERMS AND DEFINITIONS

Active Teaching and Learning of Providers: Speedy provision of education by the providers.

Creativity: Unleashing the potential of the mind to create new ideas.

Developing or Emerging Countries: Economies which are on the route to development and growth for the welfare of their people.

Digitalization: The provision of online transactions through the proliferation of Internet facilities, it is related to data. It is an essential raw material without which efficiencies cannot be achieved.

Education Programmes: Agenda that provides education to benefit the communities in an attempt to bring along social transformation.

Innovation: Introducing change into the systems.

Participation: Involvement or engagements that motivate or encourage people to work together in ensuring opportunities, increase the standard of living and stimulating economic growth within the respective setting.

Providers: This can include donors, insurers, micro-finance institutions and banks offering inclusive insurance to the low-income household markets.

Remote Education: The provision of education from out of reach places.

Chapter 9
Perceiving Sustainability:
A Workshop Concept for Creating Awareness and Building Knowledge About Sustainable Development

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ABSTRACT

Individuals are addressed by the Agenda 2030 to be an active part of sustainable development. However, sustainable development is a complex and strategic topic where individuals struggle with adequate behavior. Although, for example, the Sustainable Development Goals (SDGs) are a framework to organize the topic's complexity, the level of information often is beyond individual life. Consequently, people lack knowledge and ideas of how to act in the sense of sustainable development. To tackle this challenge, a workshop including a structural constellation is conceptualized. Based on the experiential learning process which includes feeling, reflecting, thinking, and acting, participants access the SDG-framework linked to personal experience. This is possible as the workshop uses the subgoals and indicators of the SDG-framework that are used to monitor the global achievements of countries. Workshop participants create awareness and build knowledge about sustainable development which in turn will change their behavior and may lead to innovation.

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INTRODUCTION

Sustainable development requires action from every individual around the globe (United Nations, 2015). Hence, individuals play an important role within sustainable development. Therefore, individuals need a basement of international and local awareness around the topic (Pappas & Pappas, 2015) that is fed by reliable knowledge and positive emotions that enable their willingness, force, and guidance on how to behave in the sense of sustainable development (Power et al., 2017). Individuals act as multipliers, as they transport their personal actions in daily, family, and friends' as well as social's and business' life (Ones & Dilchert, 2012) and thus contribute to the Agenda 2030. However, people lack the guidance and skills to act sustainably based on knowledge, awareness, and emotions (Power et al., 2017).

Although sustainable development is present in the media, academia, and education, there is a lack of knowledge about what it is and how it can get accomplished. One reason why there are struggles with implementing action to reach more sustainable-favorable circumstances is its complexity and status as a super wicked problem (Rittel & Webber, 1973). In an attempt to inform oneself, one is rapidly confronted with complex topics, such as hunger, pollution, and education, and solutions to these problems are complex and context-specific as well. Moreover, the finding of solutions takes place at the moment of understanding them, which is the nature of super wicked problems (Levin et al., 2012).

To structure the complex topic of sustainable development, sustainable development goals (SDGs) were formulated by the United Nations in 2015. The SDGs consist of 17 main goals and 169 targets, and they are represented by numerous indicators (United Nations, 2021). On a macro level, global problems are discussed by disciplines such as biology, sociology, politics, and economics, which are able to outline challenges. (Local) experts can specifically precise these problems on the level of nations (Sachs et al., 2019). The means to reach the 17 SDGs are often implemented on the micro-level by, for instance, networks, or organizations but not nationwide. The multitude of instruments and initiatives are thus local and decentralized. Moreover, the question of what is better and what is worse needs to be answered differently according to different contexts (Levin et al., 2012) and multi-disciplinary (Arevalo & Mitchell, 2017). Thus, engaging in and learning about sustainable development is challenging and requires particular circumstances to be fruitful.

In science, sustainability and education deals with creating and implementing sustainable development in existing curricula as well as in extra-curricular learning opportunities to address the challenges of sustainable development being a super wicked problem, complex, and context specific. Learning opportunities need to give orientation to social, ecological, and economic challenges (Elkington, 1994)

by tackling individuals' natural eagerness to learn and develop personally (Rogers, 1983). Learning opportunities and interactive instruments, such as workshops, are required to create awareness and systemically build knowledge about sustainable development (Simon, 2002). Together, these instruments need to prevent frustration caused by the topic's complexity and fundamentality (DuPuis & Ball, 2013), only then can individuals have positive emotions about being able to deal with the topic of sustainable development in its complexity and context-specificity. The instruments need to inspire learners to continue dealing with the topic and, step by step, try to act in the sense of sustainable development (Kopp, 2013). This in turn would enable the empowerment of individuals to be an active part of sustainable development worldwide as required by the Agenda 2030.

The purpose of this chapter is to conceptualize an interactive workshop to tackle the challenge of individuals' awareness-building about sustainable development, although it is full of dilemmas and contradictions (Albert et al., 2017). Building awareness is the first part of the sustainability learning process, which eventually leads to sustainability participation and action (Nobre et al., 2017; Nordman et al., 2017), and thus is the first step toward becoming active in sustainable development. In conclusion, there are three aims for the workshop besides awareness building and knowledge creation. One aim of the workshop is to offer an initial event to approach the topic of sustainable development. Furthermore, the conceptualized workshop should initiate an experiential learning process for learners and workshop hosts (D. A. Kolb et al., 2014). On a broader perspective, the workshop should serve to motivate participants' critical thinking and reflection to strengthen their learning skills and sustainable mindset as well (Rimanoczy, 2017). To foster these aims, the workshop is conceptualized as a structural constellation (Arnold, 2018) to integrate participants actively.

The conceptualization mainly includes perspectives of management education for sustainability. The knowledge base of the workshop concept is mainly Agenda 2030, with the 17 SDGs and its 169 targets. Moreover, indicators to define, measure, and compare sustainable development over time are used to design the workshop. The workshop is conceptualized to welcome individuals to deal with the topic from their individual perspective, conviction, and level of knowledge (Albert et al., 2017) in a group setting and within an interactive, moderated, and phenomenological design. Thus, the chapter discusses the challenge of how to teach and learn about sustainable development as it is a super wicked problem (Rittel & Webber, 1973) by interactive learning opportunities that use the natural wish of participants to learn (Rogers, 1983) by accepting different learning types (A. Y. Kolb & Kolb, 2005).

The chapter therefore includes a brief description of sustainable development to create awareness of what that means and how sustainable development can get accomplished. Then, sustainability is viewed from the perspective of education

and teaching to examine the requirements of sustainability as a learning topic. The next section focuses on the conceptualization of the workshop as a structural constellation. Main aspects of the workshop—a complex topic, a formation process (constellation), active participants who experience feeling, reflecting, thinking, and action, a capable workshop leader or host, and an adequate workshop space and setting, as well as the process—are discussed. This includes practical considerations for workshop realization to ensure experiential learning processes for participants and workshop leaders. Lastly, I reflect on the concept based on different issues, including potential contributions to teach and learn about a super wicked problem such as sustainable development; the workshop as a learning opportunities within and beyond higher education; and the workshop as an experiential learning option for participants and workshop hosts.

THEORETICAL CONSIDERATIONS

Sustainable Development

The Brundtland Report (Brundtland et al., 1987) and Agenda 21 from the UN Conference on Environment and Development (United Nations Conference on Environment and Development, 1992) are well-known sources for defining sustainability. One quotation from the Brundlandt Report is an often-cited definition of sustainability: *"Humanity has the ability to make development sustainable to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs." (Brundtland et al., 1987, p. 5 § 3).* It reflects the claim of intergenerational and intragenerational equity of how to deal with resources and is the basis of understanding within this chapter.

As intergenerational equity is one purpose of sustainability, there is a strong focus on environmental resources and problems. Natural resources provide livelihoods for both the current population and the following generation. In particular, the numerous underdeveloped and developing countries in Africa have to rely on their natural resources. Natural resources are used up continuously worldwide. Typical examples are the deforestation of tropical forests, water scarcity, and desertification (Kappel, 1999). People diminish their own life bases and destroy those for their children and grandchildren. It is obvious that intergenerational equity cannot be achieved with the current way of life. Intragenerational equity tries to address this matter. The aim is to achieve justice for present and future generations on a worldwide level regarding a multitude of resources.

In general, sustainability is based on three pillars: ecology, society, and economy (Elkington, 1994). However, the challenge of coping with the complexity of resource

challenges has resulted in an ongoing discussion. On the one hand, the concept and its dimensions are addressed by outlining what sustainability is relating to (What?). On the other hand, various attempts have been made to set up "guidelines" on how to achieve sustainable development (How?). In consequence, the Millennium Development Goals (MDGs) (United Nations, 2000) and the SDGs (United Nations, 2015) were formulated as an international consensus of the United Nations. These approaches especially try to address content-related complexity by structuring the challenges regarding the resources requiring changed usage and awareness. In particular, the SDGs consist of 17 goals, including 169 targets, which are measured by 231 indicators (United Nations, 2021). No matter if one focuses on the goals or indicators, these are packed with commonly agreed-upon, most pressing global challenges on different levels of details (United Nations, 2015).

Moreover, to capture sustainable development and thus determine how to accomplish it, these approaches are used to monitor country-specific development. Since 2015, when the Agenda 2030 was published by the United Nations, yearly SDG reports have outlined progress globally and for nearly each country in the world. In conclusion, the SDGs are monitored based on indicators to visualize the transformation for people, the planet, prosperity, peace, and partnership toward sustainable development (J. Sachs et al., 2019, 2020; J. D. Sachs et al., 2021). It is a quantitative approach at the country level, and 80% of the indicators must be available for a country to be included (J. Sachs et al., 2019).

Although this seems to capture the required global transformation toward sustainable development regarding "what" and "how" as well as the required monitoring, it is about each and every individual to participate, as stated in the Agenda 2030, – a task hardly to control but everyone has in his or her hands (United Nations, 2015). Thus, from the perspective of an individual, complexity requires particular learning opportunitiy and links to individual life. So the question is: If individuals want to become active participants in sustainable development, what kind, process, and setting of a learning opportunity do they need?

Sustainability and Education

Sustainable development is a complex topic derived from the matter of the content as well as the time frame. That is why it is classified as a super wicked problem (Levin et al., 2012). The nature of sustainable development as a super wicked problem is that "… the process of solving the problem is identical with the process of understanding…" (Rittel & Webber, 1973, p. 162). Super wicked problems are supposed to have better or worse solutions instead of right and wrong ones, no enumerable set of potential solutions, and no ultimate test of solutions (Rittel & Webber, 1973). Hence, sustainability is still searching for answers and will forever

do so (Pollitzer, 2018); thus, there are particular requirements for teaching and learning (Albert et al., 2017).

Especially in management education, sustainability is being integrated to ensure that ecological, social, and economic considerations are part of the decision-making and behavior of future leaders. Sustainability is incorporated in different levels of higher education, such as MBA or bachelor programs, introductory, or advanced courses, as well as in projects and interactive formats to create awareness and transfer knowledge. (Arevalo & Mitchell, 2017). Although long-term programs for teaching sustainability are especially required (Mitchell & Arevalo, 2017), there are many leaders (no classical students but still learners) who also need formats to access the topic of sustainable development.

Teaching about sustainability requires more interactive and collaborative learning, less authoritarian approaches (Simon, 2002), and interdisciplinary perspectives and considerations (Miller et al., 2017). Students experience a mix of formats, such as games, reading materials, or teaching cases, as valuable to broaden their knowledge and feel inspired to participate in sustainable development (Simmers & Soderstrom, 2017). There are a variety of tools that are adequate for teaching sustainable development, but at best, different methods are combined for a successful learning setting (Simmers & Soderstrom, 2017). Moreover, methods of reflective and meditative practices are more favorable (Rimanoczy, 2017). Thus, teachers and learners need to have learning expectations that fit into the reflexive style of teaching and learning about sustainable development (Vidal & da Silva Martins, 2017). In general, a learning opprtunity will be more likely to succeed if it is learner-centered (Boyd et al., 2017) and initiates the sustainable learning process (Nobre et al., 2017) as well as the sustainable mindset establishment (Rimanoczy, 2017). Overall, the learning process expands the learner's emotional and social intelligence (Schutel et al., 2017). The learning process starts with the creation of awareness and can result in participation or sustainable behavior (Nordman et al., 2017).

The learner therein passes an individual sustainability learning process consisting of awareness, knowledge, attitude, ability, and participation (Nobre et al., 2017). DuPuis and Ball (2013, p. 66) summarize the challenge of learning and teaching about sustainability and why it is a journey:

Defining sustainability is not taken as a problem that needs to be "solved," but an opportunity to raise new ways of thinking about the world. This approach recognizes sustainability as an intrinsically unstable concept, a dynamic idea that can never be pinned down to a particular technology, set of behaviors, or even worldview and set of values. Under this scenario, the challenge becomes to design a curriculum around an unfixed concept and engage students (or learners) with multiple modes of knowing without creating an unfocused strategy, agenda, and pedagogy.

In summary, learning opportunities in the context of sustainability require a particular learning approach (Simon, 2002), methods (Simmers & Soderstrom, 2017), and the awareness of starting a process to act sustainability-affine (Nobre et al., 2017).

Experiential Learning and Structural Constellations

The approach or concept of experiential learning is supposed to set a valuable frame for teaching and learning about complex topics such as sustainability development (Wong, 2017). Experiential learning is an approach that understands learning as the process of experiencing and reflecting (D. A. Kolb et al., 2014). Experiential learning is said to enable teaching across disciplines (Mitchell & Arevalo, 2017) and can help learners "… to experience the same passion that motivates social entrepreneurs …" (Wong, 2017). Therefore, active participation is required. To make this learning experience worthy for the participants, four modes need to be addressed: feeling, reflection, thinking, and action (Brooks-Harris & Stock-Ward, 1999; Kopp, 2013). The learning space, where the structural constellation is taking place, "… needs to be a hospitable, welcoming space that is characterized by respect for all. It needs to be safe and supportive but also challenging. It must allow learners to be in charge of their own learning and allow time for the repetitive practice that develops expertise" (Kolb, 2007, p. 20). The setting thus aims to achieve learning goals on an affective, cognitive, and psychomotor level (Airasian et al., 2001).

Creating awareness and increasing knowledge about a complex topic such as sustainable development can take place in workshop formats based on experiential learning (Brooks-Harris & Stock-Ward, 1999; Power et al., 2017). In particular, the method of a structural constellation is supposed to offer an experiential learning situation (D. A. Kolb et al., 2014) and thus can be used to create awareness, perceiving, and acknowledging systemic contexts of sustainable development (Arnold, 2018). The basic assumption behind active integration in the learning process of the participants is their natural wish to develop through learning (Rogers, 1983). As sustainable development is a systemic matter over a long time, with challenging content variety and connections (Rosselet, 2017), it is supposed to be a systemic constellation (Varga von Kibéd, 2000). The systemic and complex topic is visualized by the spatial and scenic moving and positioning of participants in a particular space and time within a structural or systemic constellation (Kopp, 2013). Each participant contributes as a representative of a particular element of the complex topic to understand and visualize the elements and their linkages, such as in sustainable development (Arnold, 2018). Thus, it requires participants who are willing to actively participate.

Each active participant contributes to its own learning process as well as to the learning process of the whole group of the workshop. Moreover, it requires a

workshop leader or host (Bodirsky, 2015) who is open-minded, unbiased, avoids personal interpretation (Arnold, 2018), and takes responsibility for the learning processes of the participants.

As a structural constellation, the workshop builds on the imagination of the participants (Arnold, 2018). Imagination is supposed to be key to empowering learners when it relates to real-world problems (Nobre et al., 2017). This means that the participants mentally create ideas in their heads (Bucher, 2019). Thus, involvement requires their willingness and ability to use the personal imagination. If this is given, each participant contributes with their individual knowledge, emotions, and assumptions. However, individuals from all over the world experience sustainable development differently (Miller et al., 2017), which corresponds with the nature of sustainability being context-specific. Thus, to integrate different individual's perspectives makes the workshop more realistic and imagination-triggering, and thus builds on diversity sensitivity (Aretz, 2004).

In summary, in an experiential learning process about sustainable development with a didactic approach to a structural constellation, there are five main aspects that make it possible and worthy for participants as well as for the workshop leader. These are explained in the following section:

1. A complex topic
2. A formation process (constellation)
3. Active participants who experience feeling, reflecting, thinking, and action
4. A capable workshop leader or host
5. An adequate workshop space and setting

WORKSHOP CONCEPTUALISATION AS A STRUCTURAL CONSTELLATION

The Complex Topic of Sustainability

While sustainability was described broadly earlier, this section addresses the question of how the complex topic of sustainable development can be broken down to make it mentally accessible for individuals. One way of considering, for instance, an innovation if it infringes on a particular SDG is to formulate the SDG into YES or NO questions or statements (Dressler & Bucher, 2018). Hence, an organization can evaluate whether an innovation is harming or contributing to sustainable development. However, this requires complex knowledge about the innovation to be evaluated. For instance, assessing whether an innovation promotes climate change and its impacts is often not an easy question to answer. Nevertheless, the idea of transforming

SDGs into YES or NO questions offers an interesting approach for individuals. Individuals or learners practice interpretive and complex adaptive system thinking by answering these questions, as they have to perceive the world holistically and inclusively (Simmers & Soderstrom, 2017).

Answering these questions enables individuals to think about complex facts, such as sustainable development, on the basis of inherent sub-aspects. Although the 17 SDGs cover sustainable development holistically (Dressler & Bucher, 2018), there are 169 sub-goals and about 230 indicators that break down the topic more detailed. An example is the indicator "*Proportion of population living below the national poverty line,*" which is part of measuring SDG 1 (United Nations, 2021).

At the level of indicators, the topic of global sustainable development reaches the individual's reality of life. For instance average hourly earnings, being indicators of Goals 8: Economic Growth, as well as literacy and numeracy skills, being part of Goal 4: Equality in Education (United Nations, 2021), are issues linked to individual experiences or knowledge. Accordingly, via the indicators of the SDG framework, individuals can access the topic, as they can link the issues of sustainable development with their personal everyday life. Consequently, for individuals, the level of indicators serves as a bridge between the complexity of global sustainable development and their individual lives.

Thus, the indicators organized according to the 17 SDGs can first be approved as containing an issue linkable to individuals' reality of life. Second, chosen indicators can be transferred into a YES or NO statement. Examples are listed in Table 1.

In general, when an individual reads or hears such a statement, he or she can decide whether the statement fits with the life situation because of personal experience. An examples is "If I am sick, I can go to a doctor." Individuals can decide whether this is true in his or her life situation. In conclusion, the complex topic reached the level of an individual's daily life. Individuals are able to link the statement cognitively, and thus a part of the complex topic of sustainable development, with something familiar. Participants understand that, for example, visiting a doctor is a global issue among sustainable development besides others. However, the decision of whether it is possible to go to a doctor depends on the particular life situation of an individual. Hence, it is important to integrate different life situations within the workshop to ensure a multitude of perspectives to, for instance, understand whether going to the doctor is easy or problematic. This is discussed in the next part of the chapter.

Active Participants: Constructed Life Situations to Perceive Sustainability

The previous section described the complexity of the topic. This section includes a multitude of perspectives on how people perceive and experience the elements of

sustainable development. By conceptualizing the workshop based on a structural constellation, participants take active roles in the accomplishment of the workshop (Arnold, 2018). Thus, the setting of the workshop integrates each participant as an expert of a particular point of view (Miller et al., 2017). This is done by constructed life situations participants receive.

Table 1. Examples of SDGs and for their indicators transformed into YES or NO statements

SDGs	Indicator	YES or NO statements
Goal 1. End poverty in all its forms everywhere	1.1.1 Proportion of population living below the national poverty line.	In my country, hardly any people live under the international poverty line.
Goal 3. Ensure healthy lives and promote well-being for all at all ages	3.8.1 Coverage of essential health services	If I am sick, I can go to a doctor.
Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	4.6.1 Proportion of population in a given age group achieving at least a fixed level of proficiency in functional (a) literacy and (b) numeracy skills, by sex	The rate of illiteracy is low in my country.
Goal 6. Ensure availability and sustainable management of water and sanitation for all	6.1.1 Proportion of population using safely managed drinking water services	I always have access to clean water.
Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all	7.1.1 Proportion of population with access to electricity	Unless a disaster has just happened, I always have access to electricity.
Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	8.8.2 Level of national compliance with labor rights	I can benefit from employee protection rights.
Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	9.1.1 Proportion of the rural population who live within 2 km of an all-season road	Infrastructure such as streets receive maintenance.
Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable	11.7.2 Proportion of persons victim of physical or sexual harassment, by sex, age, disability status and place of occurrence, in the previous 12 months (Crime rate)	Crime in our cities is below average internationally.
Goal 12. Ensure sustainable consumption and production patterns	12.5.1 National recycling rate, tons of material recycled	There is a system for recycling in my country.
Goal 17. Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development	17.8.1 Proportion of individuals using the Internet	Access to the Internet is available nearly everywhere.

This constructed life situation is not the same as the individual's real-life situation of a participant for three reasons. First, it equalizes the starting point of the participants, as each one needs to reflect on another life situation with which they are not familiar with. Second, each one can distance as much as needed, based on the

constructed life situation received by coincidence for the workshop. No participant receives feedback that is deduced from an individual's life situation in reality. No one needs to share an individual real life situation. Third, Rimanoczy, (2017) found out that addressing the topic of sustainability from a different perspective, such as the perspective of children, triggers the participants' motivation to act more sustainably.

As stated before, within sustainable education, imagination is supposed to be key to empowering learners when it relates to real-world problems (Nobre et al., 2017). For constructing life situations, it is important to keep in mind that it triggers the participants' imagination, as they are able to build mental scenes that do not exist (Fields et al., 2019). These aspects are linked to individuals' concepts or stereotypes that form our cognition (Rey, 1983). This is supposed to happen when the "new" constructed life situation is somehow linkable to personal life experience (one can imagine it) and is not too complex or conflicting (one can structure it) (Brooks-Harris & Stock-Ward, 1999).

The issue of diversity aids in creating constructed life situations for the workshop. As sustainable development is an inclusive approach, it is also important to be aware of the characteristics that describe individuals, such as age, nationality, gender, and religion (Charta der Vielfalt e.V., 2021). Thus, the idea is to give constructed life situations based on max. four aspects: country, age, gender, and a further society-related aspect, such as job situation, religion, or disability.

From a global perspective, the first issue that appears is the different countries of the world. For perceiving sustainability at an international level, constructed life situations can be based on a country in which a person is living in. For equality of the participants' starting points, it would be useful to exclude the countries the participants are from in real life. If not, people who are from a country and have a constructed life situation based on this country enter the workshop with a different set of knowledge.

A second and third aspects that are easier to image are either being male, female, (or divers), or being of a particular age. The fourth aspect of experiencing a particular situation with a society requires abstraction to ensure a connection to the participants' experiences and associated stereotypes. Although it is very sensitive to state that people could imagine sitting in a wheelchair, the author assumes that participants could easily reflect on a person being in a wheelchair or being blind, rather than telling them to imagine experiencing a life with multiple sclerosis. The same comes with religion or religious persuasion as well as with jobs. While it could trigger imagination helpfully of being a police officer, a teacher, or a pensioner, it would be less so if telling a participant to imagine being an endocrinologist or an equal opportunities officer.

Nevertheless, triggering imagination can also lead to negative emotions, which consequently has an impact on the workshop in general (Power et al., 2017) what

the workshop leader has to handle ad hoc. Emotions are understood as a kind of communication: internal emotion as a cognitive processor and external emotion to adjust social relation (Oatley & Johnson-laird, 1987). Emotion thus acts as the inner compass of an individual, as well as an interpersonal way to act. Thus, each emotion has an impact on the workshop. This is desired and needs to be integrated into the reflection part of the workshop.

Overall, the constructed life situations for reflecting sustainable aspects require a sensitive preparation beforehand. On the one hand, the more divers the frames are, the more triggers are set for the reflection an discussion. On the other hand, to equalize the starting points of the participants, it is necessary to have information about the particular individuals taking part, such as age, nationality, foreign country experience, gender, and life situation. The reason is that the prior knowledge of the participants influences the workshop and thus the learning experience of the participants and the host (Albert et al., 2017).

Moreover, as the interpretation of the constructed life situations is unique to an individual, it would be interesting to have a minimum of two participants in the workshop acting within the same constructed life situation. This assists the workshop leader in reflecting on the individual stereotypes of the participants in the discussion part of the workshop after the constellation and enables the transfer of the aspects into the real-life situations of the participants. Furthermore, it aids in reflecting on the perspectives of sustainability in different life situations.

Lastly, the constructed life situations should be formulated directly, such as:

- You are a single mother without a job in El Paso, Texas, USA.
- You have been a member of the government in Cape Town, South Africa, for 35 years.
- You are a 44-year-old professor at Stockholm University, Sweden.
- You are a Muslim girl living together with your orthodox parents in Abu Dhabi.
- You are a Chinese bachelor from Chongqing, China, who is working and living with his parents.

The Formation Process – Constellation

After receiving the constructed life situation and to feel and imagine the constructed life situation, the participants hear questions such as: Where do you live? What do you do in your free time? After this, the participants move to an imaginary starting line next to each other, facing one direction. The workshop leader then reads out loud the YES or NO statements. The participants silently agree or disagree with the

statement. If they decide a "Yes," they take one step forward. If they decide a "No," they stand still. The participants also stand still if they do not know the answer. All of these take place without talking to the other participants; this workshop time is mostly of non-verbal communication and feelings.

By going through some statements, participants form a constellation in the room, which represented sustainable development as perceived by individuals globally. During the formation, the workshop leader moves in the room between the participants, giving one statement after the other. Participants will spread around as they move forward differently often. It is supposed that the participants experience larger and smaller distances between each other.

After the silent formation, the workshop host starts asking questions to first reflect on feelings, followed by questions about the content of the questions. Still remaining in the formation, one after the other, the participants share their constructed life situations regarding the statements they respond to. Furthermore, the workshop host can offer options to turn around in the room and trade places with others (Arnold, 2018). Finally, and according to the aim of the workshop, a meta-reflection can be integrated. The content can derive from the SDG framework and, for example, how it is structured. Another option is to discuss the possible personal changes individuals can make in their lives to contribute to sustainable development. While students are maybe interested in scientific methods of measuring development based on indicators, managers may want to reflect on the contributions of their teams or the organization to sustainable development.

Workshop Space and Setting

It is assumed that up to 20 people can actively participate, and a minimum of eight people is prerequisite. Further people can take part as silent observants (Arnold, 2018) during the active part of the constellation formation and join in during the subsequent discussion. The workshop can be accomplished indoor or outdoor and requires, determined by the number of participants, a minimum space of approximately 20 m in length and 12 m in width with 20 participants and without observants (without any pandemic requirements for social distancing).

The workshop can also take place online if the host of the workshop is able to visualize the movement of the participants according to their YES or NO decisions. Options are shared documents or visualization software, such as VISPA (*VISPA - Das Nächste Level Der Virtuellen Kollaboration*, 2021).

In particular, according to Kolb (2007), there are nine hints of how to create a favorable setting for learners (Table 2). These also need to be considered to ensure an experiential learning process.

Table 2. Workshop setting concept based on Kolb

Kolb (2007) Hints for Workshop Settings	Implementation in the Workshop Concept
Respect for learners and their experience	Integration of particular country-specific experience to reconsider individual stereotypes
Begin learning with the learner's experience of the subject matter	Linking the complex topic of sustainable development with daily life experience
Creating and holding a hospitable space for learning	Indoor and outdoor with enough space
Making space for conversational learning	Enable discussions between the participants after the formation process
Making space for development of expertise	Explaining the structure of SDG-framework after the formation to understand the content in an organized manner
Making spaces for acting and reflecting	• Moving in the room (constellation) • Reflecting YES or NO statements
Making spaces for feeling and thinking	• Getting into the constructed life situations, • Perceiving feelings when deciding about YES or NO statements • Discussion of the feelings and perceptions of all participants
Making space for inside-out learning	Linking personal life experience with statements
Making space for learners to take charge of their own learning	Options of transfer the topic into future behavior

To do so, the process and concept of the workshop respects the hints for the setting, as outlined in table 3. However, an experiential learning process based on a structural constellation requires understanding a workshop process more generally to be prepared, accomplished, and evaluated properly. In general, workshops consist of preparation, execution, and revision (Brooks-Harris & Stock-Ward, 1999). As it is a structural constellation, these three phases need expansion.

A structural constellation first requires the clarification of expectations and aims. Second is the choice of participants and the clarification of their representation within the systematic, complex topic. In the third phase, the participants form the constellation by moving in the room. The fourth phase includes the expression of feelings and group connections. The fifth phase represents the final part when reflections are done (Arnold, 2018). Thereupon, the author differentiates seven phases for the particular workshop concept to perceive sustainability. These include the broader preparation and revision of the workshop by the workshop leader and participants to meet the requirements of experiential learning:

1. Upfront preparation before the day of the workshop

2. Starting the workshop: Clarification of aims and expectations, workshop rules and processes
3. Activation: Transferring participants into constructed life situations and explaining their expert role within the system as an important element
4. Forming the constellation: Participants are moving in the room
5. Reflection: Expressing feelings, discussing, and raising questions, interacting with others and the workshop space
6. Meta-reflection: Of the topic, including further information sources
7. Revision: On the workshop day and afterwards

Workshop Leader or Host

In general, as the format for creating awareness about sustainability is a workshop, the workshop leader acts as a facilitator for the experiential learning of the participants (Brooks-Harris & Stock-Ward, 1999). To this end, the workshop leader has no personal interest in finding a particular solution and understands himself or herself more than a host than a leader (Bodirsky, 2015). This is important, as the workshop includes a structural constellation where the participants visualize the topic by being an active part of the complex topic. As a facilitator, the workshop host enables dialogue with participants as well as between participants (Wilkie, 2004). In particular, asking questions to enable participants' dialogue is one of the host's major tasks of the host (Bodirsky, 2015). Furthermore, he or she communicates violence-free and holds back his or her own interpretations and ideas during the formation constellation (Arnold, 2018). Based on a variety of tools and experiences, the host uses language sensitively.

As stated in the other main aspects, the workshop host needs to be open-minded, unbiased, and avoid personal interpretation (Arnold, 2018). Furthermore, he or she is responsible for the entire workshop process and the preparation, accomplishment, and evaluation. During the accomplishment, the workshop leader is in charge of a "good flow" throughout the constellation and initiating the reflection mode of the participants. He or she needs to create awareness of elements and interpretations of sustainability that are communicated by the participants both verbal and non-verbal. These acts of communication can take place within and between learners, as they are emotion-based (Oatley & Johnson-laird, 1987). The workshop host needs to react sensitively to initiate thinking, reflection, and discussion about this aspect that triggers the participants. Within this process, learners perceive sustainability and thus understand its complexity and challenges.

Besides the expert role of the host or workshop leader, he or she is responsible for the learning experiences of the participants. This includes the reflection of experience, assimilation and abstract conceptualization, active experimentation, and planning for application (Brooks-Harris & Stock-Ward, 1999). The host needs to

be aware of these learning steps when preparing and accomplishing the workshop, as well as within the revision. Therefore, the workshop host acts as a facilitator of participant-centered interaction and dialogue (Boyd et al., 2017). Therewith, the host enables learning situations within the workshop that trigger different learning types or learning styles of the participants. This enable an easy way of accessing the topic instead of, for instance, only offering a classical lecture (A. Y. Kolb & Kolb, 2009).

Moreover, the host can also pass an experiential learning process (table 3). The learning level for the workshop leaders is to broaden the perspectives on how to perceive sustainability. Furthermore, learning is initiated and accomplished regarding workshop experience, in particular methods and topic. The accomplishment of the workshop and particular methods enables the activity of the workshop leader, one out of four modes identified as relevant for learning. Further, the host experiences the participants' verbal and non-verbal reactions during the formation and discussion, which contribute to the mode of feeling and reflecting. The host's reflection should consider three levels: reflection-in-action (while performing), reflection-on-action (stopping the performance) and reflection-for-action (alternatives to continue the performance) (Schön, 2017). This has a positive impact on the workshop, as it is in continuous adaption to the requirements of the learners (Orakcı, 2021). By preparing and revising the workshop, the workshop leader passes the mode of thinking about sustainable development. In summary, all four modes are passed by the host of the workshop, and thus represent an experiential learning process (D. A. Kolb, 2007).

Expectations and COnclusion

Each individual, organization, and institution is addressed by Agenda 2030 to be a part of sustainable development. It is also obvious that everyone has a different understanding, focus, ideas, emotions, and action to contribute to, or not, regarding the SDGs, as it is a super wicked problem (Levin et al., 2012) and thus is full of dilemmas and contradictions (Albert et al., 2017). Creating awareness and developing a common understanding about sustainable development is key to integrating everyone to enable change in regard of the SDGs. The workshop is one option to inform, capture attention, and inspire individuals to become an active and cognizant part. In general, the workshop contributes to creating awareness about sustainable development and the SDG framework as a resource-sensitive and strategic topic based on economic, ecological, and social issues (Elkington, 1994). Thus, it tackles the lack of knowledge about how to behave in the sense of SDGs to ensure global sustainable development. Furthermore, the aim is to tackle the intention–behavior gap to get people into action because of increased knowledge (Fishbein & Ajzen, 1977).

Table 3. Workshop process: Preparation, execution, and revision to enable experiential learning for participants and host

	Preparation **Phase 1+2**	**Execution** **Phases 3–5**	**Revision** **Phase 6+7**
Participants	- Giving information required by the workshop leader such as nationality, etc. before the workshop day (Phase 1) - Listening to game rules, aim of the workshop, workshop process (Phase 2)	**Experiential Learning of the participant** - **Feeling** emotions, have silent imagination (Phase 3+4: receiving the constructed life situation, getting into the new frame, answering YES- and NO-questions) - **Reflection:** Talking about feelings, ideas, and comments (Phase 5: Reflecting feelings, assumptions, ideas in the formed constellation) - **Thinking:** Answering and raising questions, concluding abstract implications (Phase 5: group discussion) - **Action:** Moving in the room, getting in touch with others (Phase 3–5: silent and loud moving in the room)	**Meta reflection** in the group - Structuring sustainable elements to form a complex picture of sustainable development - Transferring toward possible activities - Including further knowledge and resources of information **Individual revision** after the workshop: - Filling in an evaluation form - Completing a seminar paper, for example - Working in group to plan activities
Workshop Leader	- Creating constructed life situation according to participants feedback and overall aim of the workshop and print them (Phase 1) - Visualizing workshop rules - Perceiving the room as a part of the structural constellation - Explaining the process, the rules to ensure the respect of each participant as an expert of her or his constructed life situation, and the aim (Phase 2)	**Experiential Learning of the workshop leader** - **Action:** Executing the phases + If needed repeat workshop rules, Move between the participants - **Feeling:** Reacting according to perceived feelings (Phase 3+4) - **Reflection:** Raising questions (Phase 4) - **Thinking:** Trigger movement to change perspectives. (Phase 5)	**Meta reflection** in the group - Leading the meta reflection and giving further input for the topic sustainable development according to the aim of the workshop. - Stimulating an afterward encounter with the topic **Workshop revision:** - Receiving an evaluation form - Lessons learned for the workshop concept
Setting and Space	**Setting** - **Challenging and equalizing** as each participants receives a unknown life situation (Phase 1) **Space** - **Hospitable and welcoming** - Placing the game rules - Identifying the starting line - Freeing the room of unnecessary furniture (Phase 2)	**Setting** - Integration of each participant including all feelings, verbal and non-verbal expressions - Directly addressing questions to trigger the participants imagination and reflection - Participants move according to their answers and are **responsible** for their particular integration. - Workshop leader moves around **Space** - Free of interruptions - Is part of the reflection such as walls as borders.	**Setting (Phase 6)** - Disband the structural constellation - Having food and drinks if needed - Turn towards a presentation medium of needed - Encourage further dealing with the topic **Space (Phase 7)** - Rearrangement - Tidying up

Knowledge and education are factors that enable individuals to act more with sustainability awareness (Power et al., 2017). The workshop initiates the learning process to finally participate in sustainable development if wanted. By conducting the workshop within universities, for-profit and non-profit organizations, schools, or consultancies, people can become informed and can, if willing, transfer their insights to others within their daily work, friends, and family life (Ones & Dilchert, 2012). This seems necessary, especially as leadership programs on sustainable development are still missing, for example, in higher education (Rimanoczy, 2017).

The workshop tackles concepts and stereotypes that every single individual carries about daily life issues regarding countries, professions, gender, and age (Rey, 1983). By taking a constructed life situation that has information about these four issues, the participant positions himself or herself with his own knowledge and emotions and expresses this verbal and non-verbal by answering YES or NO questions, thus formatting the constellation. The individual can hide themselves behind the constructed life siuation, where they have their particular assumptions during the formation of the constellation. However, they can also come back to themselves during the discussion and reflect on decisions on an abstract level. The awareness of individual concepts and stereotypes is also reflected in the workshop. This is important to decouple personal convictions from facts about sustainable development. Furthermore, it enables visualization of the multitude of perspectives that are context-specific and thus are much welcomed to be shared in such a workshop, as it helps all participants to broaden their own viewpoint.

Learning effects come from emotions that develop during constellation forming, as the participants are not allowed to speak and share thoughts during that phase, too. A main point to experience is the feeling and perception of one's own and others emotion (A. Y. Kolb & Kolb, 2005). During the discussion part, the participants learn to express feelings, thoughts, and ideas and to listen to other perspectives and respond to them (on their own or to the group). It broadens the horizons of each participant by passing them through a complete experiential learning process (D. A. Kolb, 2007). This is also the case for the workshop host. As he or she is responsible for the learning setting for the participants and thoroughly prepares, accomplishes, and revises the workshop, the host also passes through an experiential learning process. Thus, the author expects that the aim of the workshop will be met: to create awareness and transfer knowledge for participants. First, because it is required by Agenda 2030 (United Nations, 2015), but it also potentially contributes to different levels of individual development.

Moreover, it is assumed that on the basis of awareness and knowledge about sustainable development, the creativity of participants is triggered (Amabile, 2012), which may lead to innovative behavior (Florida, 2004). In an organizational context, the workshop may improve employee-driven innovation, regardless of the learning

type (Kurz et al., 2018). Thus, this chapter contributes a workshop designed to create awareness within and beyond higher education, which can be accomplished within existing curricula as well as a standalone workshop.

From the viewpoint of management, this workshop contributes to the requirement for a new and more humanistic vision of management (Schutel et al., 2017). Through the opportunity to modify their way of thinking and learning, people develop their skills in a context where understanding and participating in sustainable development take place simultaneously. The workshop, as conceptualized, may also represent how to start an individual's sustainable learning processes (Nobre et al., 2017) and establish a sustainable mindset (Rimanoczy, 2017). In an even larger context, the workshop may reduce the fear of dealing with super wicked problems by empowering people to use their cognition, non-cognitive skills, and emotional intelligence (Schutel et al., 2017).

REFERENCES

Airasian, P., Cruikshank, K. A., Mayer, R. E., Pintrich, P., Raths, J., & Wittrock, M. C. (2001). *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. Academic Press.

Albert, M., Breßler, J., & Hüsig, S. (2017). Expansive Learning through contradictions of sustainability. *Handbook of Sustainability in Management Education*. https://www.elgaronline.com/view/edcoll/9781785361234/9781785361234.00021.xml

Aretz, H.-J. (2004). Ökonomischer Liberalismus, postmodernes Diversity Management in Unternehmen und der Geist des Kapitalismus. *Osterreichische Zeitschrift fur Soziologie*, *29*(3), 3–23. doi:10.100711614-004-0019-1

Arevalo, J. A., & Mitchell, S. F. (2017). *Handbook of sustainability in management education: In search of a multidisciplinary, innovative and integrated approach*. Edward Elgar Publishing. doi:10.4337/9781785361241

Arnold, M. G. (2018). *Systemische Strukturaufstellungen in Beratung und Management*. Springer. doi:10.1007/978-3-662-56350-2

Bertelsmann Stiftung and Sustainable Development Solutions Network (SDSN). (2016). *SDG Index & Dashboards A Global Report*. https://www.bertelsmann-stiftung.de/de/publikationen/publikation/did/sdg-index-dashboards/

Bodirsky, C. (2015). Betrachtungen zur Qualität in der Leitung von Familienaufstellungen/Reflections on quality in leading systemic constellations. *Kontext*, *46*(2), 110–124. doi:10.13109/kont.2015.46.2.110

Boyd, N., Hendry, J. R., Hiller, T. B., & Martin, E. (2017). Managing for Sustainability: Designing a successful undergraduate program. In *Handbook of Sustainability in Management Education*. Edward Elgar Publishing. doi:10.4337/9781785361241.00036

Brooks-Harris, J. E., & Stock-Ward, S. R. (1999). *Workshops: Designing and Facilitating Experiential Learning*. SAGE Publications.

Brundtland, G. H., Khalid, M., & Agnelli, S. (1987). *Our common future*. Academic Press.

Bucher, J. (2019). The Overlooked Roots of Innovations: Exploring the Relevance of Imagination on Innovation Using Science Fiction. In Responsible, Sustainable, and Globally Aware Management in the Fourth Industrial Revolution (pp. 55–75). IGI Global.

Charta der Vielfalt, V. (2021). *Diversity Dimensions*. https://www.charta-der-vielfalt.de/en/understanding-diversity/diversity-dimensions/

Dressler, A., & Bucher, J. (2018). *Introducing a sustainability evaluation framework based on the Sustainable Development Goals applied to four cases of South African frugal innovation*. Bus Strat Dev., doi:10.1002/bsd2.37

DuPuis, E. M., & Ball, T. (2013). How not what: Teaching sustainability as process. *Sustainability: Science. Practice and Policy*, *9*(1), 64–75.

Elkington, J. (1994). Towards the sustainable corporation: Win-win-win business strategies for sustainable development. *California Management Review*, *36*(2), 90–100. doi:10.2307/41165746

Fields, Z., Bucher, J., & Weller, A. (2019). *Imagination, Creativity, and Responsible Management in the Fourth Industrial Revolution*. IGI Global. https://www.igi-global.com/book/imagination-creativity-responsible-management-fourth/www.igi-global.com/book/imagination-creativity-responsible-management-fourth/219370

Fishbein, M., & Ajzen, I. (1977). Belief, attitude, intention, and behavior: An introduction to theory and research. *Philosophy & Rhetoric*, *10*(2).

Florida, R. (2004). The rise of the creative class and how it's transforming work, leisure, community and everyday life. Basic Books.

Kappel, R. (1999). Entwicklungsstrategien für Wirtschaft und Gesellschaft. *Bundeszentrale Für Politische Bildung (BpB). Informationen Zur Politischen Bildung, 264*.

Kolb, A. Y., & Kolb, D. A. (2005). Learning styles and learning spaces: Enhancing experiential learning in higher education. *Academy of Management Learning & Education*, *4*(2), 193–212. doi:10.5465/amle.2005.17268566

Kolb, A. Y., & Kolb, D. A. (2009). Experiential Learning Theory: A Dynamic, Holistic Approach to Management Learning, Education and Development. In The SAGE Handbook of Management Learning, Education and Development (pp. 42–68). SAGE Publications Ltd. doi:10.4135/9780857021038.n3

Kolb, D. A. (2007). *The Kolb learning style inventory*. Hay Resources Direct Boston.

Kolb, D. A., Boyatzis, R. E., & Mainemelis, C. (2014). Experiential Learning Theory: Previous Research and New Directions. In R. J. Sternberg & L. Zhang (Eds.), Perspectives on Thinking, Learning, and Cognitive Styles (pp. 227–248). Routledge. doi:10.4324/9781410605986-9

Kopp, U. (2013). Systemische Nachhaltigkeitskompetenzen für Führungskräfte – Erfahrungen mit Aufstellungsarbeit in der Managementaus- und weiterbildung. *Die Unternehmung*, *67*(2), 126–151. doi:10.5771/0042-059X-2013-2-126

Kurz, V., Hüsig, S., & Dowling, M. (2018). What drives different employee types of innovative behaviour? Development and test of an integrative model of employee driven innovation in German firms. *International Journal of Entrepreneurship and Innovation Management*, *22*(4–5), 397–426. doi:10.1504/IJEIM.2018.092955

Levin, K., Cashore, B., Bernstein, S., & Auld, G. (2012). Overcoming the tragedy of super wicked problems: Constraining our future selves to ameliorate global climate change. *Policy Sciences*, *45*(2), 123–152. doi:10.100711077-012-9151-0

Miller, R., Bell, R. G., Fodness, D., & Whittington, J. L. (2017). Sustainability through stakeholder value creation: Redesigning an MBA curriculum. In *Handbook of Sustainability in Management Education*. Edward Elgar Publishing. doi:10.4337/9781785361241.00022

Mitchell, S. F., & Arevalo, J. A. (2017). Conclusion. In *Handbook of Sustainability in Management Education*. https://www.elgaronline.com/view/edcoll/9781785361234/9781785361234.00038.xml

Nobre, F. S., Arevalo, J. A., & Mitchell, S. F. (2017). Sustainability learning processes: Concepts, benchmarking, development, and integration. In *Handbook of Sustainability in Management Education*. Edward Elgar Publishing. doi:10.4337/9781785361241.00020

Nordman, E. E., Christopher, N., & Jakobcic, Y. (2017). Sustainability as a University Value: A journey from awareness to behavior change. In *Handbook of Sustainability in Management Education*. Edward Elgar Publishing. doi:10.4337/9781785361241.00014

Oatley, K., & Johnson-laird, P. N. (1987). Towards a Cognitive Theory of Emotions. *Cognition and Emotion*, *1*(1), 29–50. doi:10.1080/02699938708408362

Ones, D. S., & Dilchert, S. (2012). Environmental sustainability at work: A call to action. *Industrial and Organizational Psychology: Perspectives on Science and Practice*, *5*(4), 444–466. doi:10.1111/j.1754-9434.2012.01478.x

Orakcı, Ş. (2021). Teachers' Reflection and Level of Reflective Thinking on the Different Dimensions of their teaching practice. *International Journal of Modern Education Studies*, *5*(1), 117–145.

Pappas, J. B., & Pappas, E. C. (2015). The Sustainable Personality: Values and Behaviors in Individual Sustainability. *International Journal of Higher Education*, *4*(1), 12–21.

Power, N., Beattie, G., & McGuire, L. (2017). Mapping our underlying cognitions and emotions about good environmental behavior: Why we fail to act despite the best of intentions. *Semiotica*, *2017*(215), 193–234. doi:10.1515em-2016-0035

Rey, G. (1983). Concepts and stereotypes. *Cognition*, *15*(1), 237–262. doi:10.1016/0010-0277(83)90044-6 PMID:6686511

Rimanoczy, I. (2017). Developing the sustainability mindset. In *Handbook of Sustainability in Management Education*. Edward Elgar Publishing. doi:10.4337/9781785361241.00019

Rittel, H. W. J., & Webber, M. M. (1973). Dilemmas in a General Theory of Planning. *Policy Sciences*, *4*(2), 155–169. doi:10.1007/BF01405730

Rogers, C. R. (1983). *Freedom to learn for the 80s*. Charles E. Merrill Publishing Company.

Sachs, J., Schmidt-Traub, G., Kroll, C., Lafortune, G., & Fuller, G. (2019). *Sustainable Development Report 2019. Bertelsmann Stiftung and Sustainable Development Solutions Network*. SDSN.

Sachs, J., Schmidt-Traub, G., Kroll, C., Lafortune, G., Fuller, G., & Woelm, F. (2020). Sustainable Development Report 2020. *The Sustainable Development Goals and COVID-19*, 1–99.

Sachs, J. D., Kroll, C., Lafortune, G., Fuller, G., & Woelm, F. (2021). *The Decade of Action for the Sustainable Development Goals: Sustainable Development Report 2021*. Cambridge University Press. https://www.sustainabledevelopment.report

Schön, D. A. (2017). *The reflective practitioner: How professionals think in action*. Routledge. doi:10.4324/9781315237473

Schutel, S., Raufflet, E., & Jacobi, P. R. (2017). Sustainability in management education: An alternative paradigm based on critical pedagogy and substantive rationality. In *Handbook of Sustainability in Management Education*. Edward Elgar Publishing. doi:10.4337/9781785361241.00013

Simmers, C. A., & Soderstrom, S. (2017). A review of the pedagogical tools, games, and simulations in the sustainability classroom. Handbook of Sustainability in Management Education.

Simon, S. (2002). *Participatory online environmental education at the Open University UK*. Academic Press.

Tidwell, J. (2002). *UI Patterns and Techniques*. Academic Press.

United Nations. (2000). The Millennium Development Goals. New York: United Nations.

United Nations. (2015). *Transforming our World: The 2030 Agenda for Sustainable Development. Sustainable Development Knowledge Platform*. https://sustainabledevelopment.un.org/post2015/transformingourworld/publication

United Nations. (2021). *SDG Indicators—SDG Indicators*. Sustainable Development Goals. https://unstats.un.org/sdgs/indicators/indicators-list/

United Nations Conference on Environment and Development. (1992). *Agenda 21—Earth Summit*. Author.

Varga von Kibéd, M. (2000). *Unterschiede und tiefere Gemeinsamkeiten der Aufstellungsarbeit mit Organisationen und der systemischen Familienaufstellungen. In Praxis Der Organisationsaufstellungen. Grundlagen, Prinzipien, Arbeitsbereiche*. Carl-Auer-Systeme.

Vidal, A., & da Silva Martins, G. (2017). The importance of philosophical and anthropological knowledge in management education regarding sustainability. In *Handbook of Sustainability in Management Education*. Edward Elgar Publishing. doi:10.4337/9781785361241.00015

VISPA - Das nächste Level der virtuellen Kollaboration. (2021). *Step up Your Workshop Game with Vispa*. https://vispa.io/de/

Wilkie, K. (2004). Becoming facilitative: Shifts in lecturers' approaches to facilitating problem-based learning. *Challenging Research in Problem-Based Learning*, 81–92.

Wong, L. T. (2017). Mission possible: Introducing sustainability as an experiential entrepreneurship activity. In *Handbook of sustainability in management education*. Edward Elgar Publishing. doi:10.4337/9781785361241.00017

KEY TERMS AND DEFINITIONS

Experiential Learning: A learner-centered approach of individuals creating knowledge through experiencing and reflecting suitable for multidisciplinary topics.

Experiential Learning Process: Learners pass an individual process of knowledge creation by going through the modes of acting, feeling, reflecting, and thinking.

Learning Opportunity: A situation of awareness building and knowledge creation, at best realized and reflected by an individual to some extent.

Structural Constellations: Formats of learning opportunities where participants take part actively as an element of a complex topic and spatial move within a particular area to visualize the links and relations of the complex topic's elements.

Super Wicked Problems: Challenging topics requiring openness and a variety of methods to discover the inherent issues and their solution simultaneously because of the content-complexity and context-relatedness.

Sustainability Education: All kinds of learning opportunities fostering a positive impact on sustainable development by individuals, organizations, and institutions.

Sustainable Development: A processual perspective on sustainability that refers to processes of considerations and improved handling of ecological, social, and economic resources world-wide in an intergenerational, holistic, and fair manner.

Sustainable Development Goals (SDGs): A structured collection of the most pressing issues regarding the global ecological, social, and economic resources formulated by the United Nations.

Workshops: Short-time learning experiences that can include various didactics and different levels of learner integration applicable for curricular or extra-curricular learning opportunities in all levels of education.

Conclusion

We have explored the WCIW/D, creativity, innovation, and education from various perspectives.

WCIW/D aims annually to make people aware of the importance of celebrating creativity and innovation to create a better world for all, as indicated by the 17 Sustainable Development Goals (SDGs).

We have seen that creative leadership is an essential part of instilling creativity and innovation in an organization and its people, as leaders set the tone for others to follow. Creativity plays an essential role in the success of entrepreneurs and should thus be developed more through entrepreneurial education.

Collective innovation helps to create effective innovation strategies. Collective action initiatives, metacognitive skills in group collaboration, and collaborative innovation processes are key in collective innovation. Entrepreneurial innovation has been discussed as a vital ingredient for successful future entrepreneurs.

The role and ways of teaching and learning have changed dramatically since the beginning of 2020, therefore necessitating a refreshing and overhaul of relevant policies, desperately required to stimulate creativity and innovation. There is a need for better education to develop these skills, which will be essential for working with people (in person and remotely) as well as with technology (artificial intelligence and robotics) in a post-pandemic society. It is important not to forget low-income population groups in education, as the combined efforts of everyone in society are required to achieve the SDGs. Frameworks and workshops based on the experiential learning process are thus required, which must include feeling, reflecting, thinking, and acting, to develop creativity, innovation, and an awareness of the SDGs in order to tackle these super wicked problems.

Remember the words,

"Whatever we think and believe, we can achieve"

It is up to us to make the difference we want to see in the world.

Compilation of References

Accenture. (2013). *The digital insurer unleashing the potential of social media in insurance*. Retrieved June 22, 2021, from https://insuranceblog.accenture.com/wp-content/uploads/2018/07/Insight-unleashing-potential-social-media-insurance-POV.pdf

Ackoff, R. L. (1981). The Art and Science of Mess Management. *INFORMS Journal on Applied Analytics*, *11*(1), 20–26. doi:10.1287/inte.11.1.20

Ackoff, R. L. (1999). Disciplines, the two cultures, and the scianities. *Systems Research and Behavioral Science*, *16*(6), 533–537. doi:10.1002/(SICI)1099-1743(199911/12)16:6<533::AID-SRES302>3.0.CO;2-R

Ahmed Qalawa, S. A., Shahin, E. S., Hassan, N., & Gaballa, S. (2015). Relationship between cognitive motivation, student adjustment and attitude towards nursing profession: As student nurse perceived. *Journal of Emerging Trends in Educational Research and Policy Studies*, *6*(1), 102–112. https://journals.co.za/content/sl_jeteraps/6/1/EJC178654

Airasian, P., Cruikshank, K. A., Mayer, R. E., Pintrich, P., Raths, J., & Wittrock, M. C. (2001). *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. Academic Press.

Akhter, P. F. (2017). Unlocking digital entrepreneurship through technical business process. *International Journal of Entrepreneurship and Sustainability Issues*, *5*(1), 36–42. doi:10.9770/jesi.2017.5.1(3)

Albert, M., Breßler, J., & Hüsig, S. (2017). Expansive Learning through contradictions of sustainability. *Handbook of Sustainability in Management Education*. https://www.elgaronline.com/view/edcoll/9781785361234/9781785361234.00021.xml

Albrectsen, A. (2017, January 31). *Why collaboration will be key to achieving the Sustainable Development Goals*. World Economic Forum. https://www.weforum.org/agenda/2017/01/realising-the-potential-of-cross-sector-partnerships/

Alexanda, L., Julia, H., & Won, J. B. (2018). *Issues and Trends in Education for sustainable development*. UNESCO Publishing.

Alexander, C., & Alexander, P. (1979). The Timeless Way of Building. Oxford University Press.

Alexander, C. (1977). *A Pattern Language: Towns, Buildings, Construction*. Oxford University Press.

Alexy, O., & Reitzig, M. (2013). Private–collective innovation, competition, and firms' counterintuitive appropriation strategies. *Research Policy*, *42*(4), 895–913. doi:10.1016/j.respol.2013.01.004

Aljughaiman, A., & Mowrer-Reynolds, E. (2005). Teachers' conception of creativity and creative students. *The Journal of Creative Behavior*, *39*(1), 17–34. doi:10.1002/j.2162-6057.2005.tb01247.x

Ansong, E., & Boateng, R. (2019). Surviving in the digital era – business models of digital enterprises in a developing economy. *Digital Policy. Regulation & Governance*, *21*(2), 164–178. doi:10.1108/DPRG-08-2018-0046

Anttiroiko, A. V. (2016). City-as-a-platform: The rise of participatory innovation platforms in Finnish cities. *Sustainability*, *8*(9), 922. doi:10.3390u8090922

Aretz, H.-J. (2004). Ökonomischer Liberalismus, postmodernes Diversity Management in Unternehmen und der Geist des Kapitalismus. *Osterreichische Zeitschrift fur Soziologie*, *29*(3), 3–23. doi:10.100711614-004-0019-1

Arevalo, J. A., & Mitchell, S. F. (2017). *Handbook of sustainability in management education: In search of a multidisciplinary, innovative and integrated approach*. Edward Elgar Publishing. doi:10.4337/9781785361241

Arlindo, M., Silva, R. G., & Santos, G. (2020). Why most University-Industry Partnerships Fail to Endure and How to Create Value and Gain Competitive Advantage through Collaboration -A Systemic Review. *Quality Innovation Prosperity*, *24*, 1–17.

Arnold, M. G. (2018). *Systemische Strukturaufstellungen in Beratung und Management*. Springer. doi:10.1007/978-3-662-56350-2

Asokan, M. (2020). *Changing perception about insurance in India from Policybazaar.com*. Retrieved June 22, 2021, from https://timesofindia.indiatimes.com/business/india-business/survey-finds-changing-perception-on-insurance-in-india/articleshow/70001916.cms

Assaf, A., & Scuderi, R. (2020). *COVID-19 and the recovery of the tourism industry*. Academic Press.

Association for Savings and Investment South Africa. (2013) *Research and Publications*. Retrieved May 13, 2021, from https://www.asisa.co.za/index.php/en/research-publication

Atiase, V., Mahmood, S., Wang, Y., & Botchie, D. (2018). Developing entrepreneurship in Africa: Investigating critical resource challenges. *Journal of Small Business and Enterprise Development*, *25*(4), 644–666. doi:10.1108/JSBED-03-2017-0084

Atiku, S. O. (2018). Reshaping Human Capital Formation Through Digitalization. In P. Duhan, K. Singh, & R. Verma (Eds.), *Radical Reorganization of Existing Work Structures Through Digitalization* (pp. 52–73). IGI Global. doi:10.4018/978-1-5225-3191-3.ch004

Atiku, S. O. (2020). *Human Capital Formation for the Fourth Industrial Revolution*. IGI Global. doi:10.4018/978-1-5225-9810-7

Atiku, S. O. (2020). Knowledge Management for the Circular Economy. In N. Baporikar (Ed.), *Handbook of Research on Entrepreneurship Development and Opportunities in Circular Economy* (pp. 520–537). IGI Global. doi:10.4018/978-1-7998-5116-5.ch027

Atiku, S. O. (2021). Human Capacity Building Through University-Industry Collaboration. In D. Günay, T. Asunakutlu, & O. Yildiz (Eds.), *University-Industry Collaboration Strategies in the Digital Era* (pp. 321–336). IGI Global. doi:10.4018/978-1-7998-3901-9.ch016

Atiku, S. O., & Anane-simon, R. (2020). Leadership and Innovative Approaches in Higher Education. In N. Baporikar & M. Sony (Eds.), *Quality Management Principles and Policies in Higher Education* (pp. 83–100). IGI Global. doi:10.4018/978-1-7998-1017-9.ch005

Atiku, S. O., & Boateng, F. (2020). Rethinking Education System for the Fourth Industrial Revolution. In S. O. Atiku (Ed.), *Human Capital Formation for the Fourth Industrial Revolution* (pp. 1–17). IGI Global. doi:10.4018/978-1-5225-9810-7.ch001

Atiku, S. O., & Lawal, I. O. (2021). Human Capital Development Strategy for a Sustainable Economy. In S. O. Atiku & T. Fapohunda (Eds.), *Human Resource Management Practices for Promoting Sustainability* (pp. 116–133). IGI Global. doi:10.4018/978-1-7998-4522-5.ch007

Autio, E., Kenney, M., Mustar, P., Siegel, D., & Wright, M. (2014). Entrepreneurial innovation: The importance of context. *Research Policy*, *43*(7), 1097–1108. doi:10.1016/j.respol.2014.01.015

Autor, D. H. (2015). Why Are There Still So Many Jobs? The history and future of workplace automation. *The Journal of Economic Perspectives*, *29*(3), 3–30. doi:10.1257/jep.29.3.3

Ayele, S., Khan, S., & Sumberg, J. (2017). Introduction: New Perspectives on Africa's Youth Employment Challenge. *IDS Bulletin*, *47*(3). Advance online publication. doi:10.19088/1968-2017.123

Bacigalupo, M., Kampylis, P., Punie, Y., & Van den Brande, G. (2016). EntreComp: The entrepreneurship competence framework. *Luxembourg*. *Publication Office of the European Union*, *10*, 593884.

Bandiera, O., Buehren, N., Goldstein, M. P., Rasul, I., & Smurra, A. (2019). The economic lives of young women in the time of Ebola: lessons from an empowerment program. WPS8760, The World Bank. doi:10.1596/1813-9450-8760

Banel-Estanol, A., Jofre-Bonet, M., & Meissner, C. (2010). *The impact of industry collaboration on Research: Evidence from Engineering Academics in the UK*. London: Working Paper City University.

Basseches, M.(2005). *The Development of Dialectical Thinking As An Approach to Integration*. Academic Press.

Basseches, M. (1984). *Dialectical Thinking and Adult Development*. Ablex Publishing Corporation.

Beghetto, R. (2013). killing ideas softly? The promise and perils of creativity in the classroom. Charlotte, NC: Information Age Publishing.

Beghetto, R. A. (2016). Creative learning: A fresh look. *Journal of Cognitive Education and Psychology*, *15*(1), 6–23. doi:10.1891/1945-8959.15.1.6

Bel, S., & Caicedo, M. P. (2013). Audiovisual Mass Media Campaigns for Insurance Education: Stages and lessons. International Labour Organisation.

Bellows, R. (1959). *Creative Leadership*. Prentice-Hall.

Bender, T. (2003). Discussion-Based Online Teaching to Enhance Student-Learning. *Stylus*.

Bertelsmann Stiftung and Sustainable Development Solutions Network (SDSN). (2016). *SDG Index & Dashboards A Global Report*. https://www.bertelsmann-stiftung.de/de/publikationen/publikation/did/sdg-index-dashboards/

Berthet, E. T., & Hickey, G. M. (2018). Organizing collective innovation in support of sustainable agro-ecosystems: The role of network management. *Agricultural Systems*, *165*, 44–54. doi:10.1016/j.agsy.2018.05.016

Black, A. (2020, February 10). *WCIW | #IAmCreative* [Video]. YouTube. https://www.youtube.com/watch?v=xMvP5IGRi74

Bligh, D. A. (2000). *What's the Use of Lectures?* Jossey-Bass.

Block, F., & Keller, M. R. (2009). Where do innovations come from? Transformations in the US economy, 1970–2006. *Socio-economic Review*, *7*(3), 459–483. doi:10.1093er/mwp013

Bodirsky, C. (2015). Betrachtungen zur Qualität in der Leitung von Familienaufstellungen/Reflections on quality in leading systemic constellations. *Kontext*, *46*(2), 110–124. doi:10.13109/kont.2015.46.2.110

Bonney, C. N. R., & Sternberg, R. R. J. (2016). Learning to think critically. In R. E. Mayer & P. A. Alexander (Eds.), *Handbook of Research on Learning and Instruction* (2nd ed., pp. 191–222). Routledge. doi:10.4324/9781315736419

Boyd, N., Hendry, J. R., Hiller, T. B., & Martin, E. (2017). Managing for Sustainability: Designing a successful undergraduate program. In *Handbook of Sustainability in Management Education*. Edward Elgar Publishing. doi:10.4337/9781785361241.00036

Bozkurt, A. (2019). Intellectual roots of distance education: A progressive knowledge domain analysis. *Distance Education*, *40*(4), 497–514. doi:10.1080/01587919.2019.1681894

Bragança, L., Vieira, S. M., & Andrade, J. B. (2014). Early stage design decisions: The way to achieve sustainable buildings at lower costs. *TheScientificWorldJournal*, *2014*, 2014. doi:10.1155/2014/365364 PMID:24578630

Brewer, D., & Tierney, W. (2012). Reinventing Higher Education: The Promise of Innovation. Harvard Education Press.

Brewer, D., & Tierney, W. (2012). Barriers to Innovation in the US Education. In B. Wildavsky, E. Kelly, & K. Carey (Eds.), *Reinventing Higher Education: The Promise of Innovation* (pp. 11–40). Harvard Education Press.

Brooks-Harris, J. E., & Stock-Ward, S. R. (1999). *Workshops: Designing and Facilitating Experiential Learning*. SAGE Publications.

Brundtland, G. H., Khalid, M., & Agnelli, S. (1987). *Our common future*. Academic Press.

Brydges, T., & Pugh, R. (2021). Coming into fashion: Expanding the entrepreneurial ecosystem concept to the creative industries through a Toronto case study. *The Canadian Geographer / Le Géographe canadien*. doi:10.1111/cag.12674

Bucher, J. (2019). The Overlooked Roots of Innovations: Exploring the Relevance of Imagination on Innovation Using Science Fiction. In Responsible, Sustainable, and Globally Aware Management in the Fourth Industrial Revolution (pp. 55–75). IGI Global.

Bulcke, P. (2017, January 10). *To achieve the SDGs, the world must work together.* World Economic Forum. https://www.weforum.org/agenda/2017/01/sustainable-development-goals-partnerships

Burgan, M. (2006). In Defense of Lecturing. *Journal of Change*, *38*(6), 30–34. doi:10.3200/CHNG.38.6.30-34

Calzada, I., & Cobo, C. (2015). Unplugging: Deconstructing the smart city. *Journal of Urban Technology*, *22*(1), 23–43. doi:10.1080/10630732.2014.971535

Camillus, J. C. (2008). Strategy as a Wicked Problem. *Harvard Business Review*. https://hbr.org/2008/05/strategy-as-a-wicked-problem

Capotescu, S. (2019). Ergonomics and the meaning of work. *IETI Transactions on Ergonomics and Safety*, *3*(2), 11–24.

Castellacci, F., & Natera, J. M. (2015). The convergence paradox: the global evolution of national innovation systems. The handbook of global science, technology, and innovation, 15-45.

Charta der Vielfalt, V. (2021). *Diversity Dimensions*. https://www.charta-der-vielfalt.de/en/understanding-diversity/diversity-dimensions/

Chen, Z., Huo, Y., Lam, W., Luk, R. C. T., & Qureshi, I. (2021). How perceptions of others' work and impression management motives affect leader-member exchange development: A six-wave latent change score model. *Journal of Occupational and Organizational Psychology*, *94*(3), 1–27. doi:10.1111/joop.12341

Chiang, Y. H., Zhou, L., Li, J., Lam, P. T. I., & Wong, K. W. (2014). Achieving sustainable building maintenance through optimizing life-cycle carbon, cost, and labor: Case in Hong Kong. *Journal of Construction Engineering and Management*, *140*(3), 05014001. doi:10.1061/(ASCE)CO.1943-7862.0000823

Chi, S.-A., Kim, S. H., & Kim, H. (2016). Problem behaviours of kindergartners: The affects of children's cognitive ability, creativity, and self-esteem. *South African Journal of Education*, *36*(1), 1–10. doi:10.15700aje.v36n1a1177

Chongfeng Mao, X. Y., King, Z., Harms, R., & Fang, G. (2020). Knowledge growth in University-Industry innovation networks: Results from a Simulation Study. *Technological Forecasting and Social Change*.

Christensen, T. (2015, May 18). The differences between imagination, creativity, and innovation. *Creative Something*. https://creativesomething.net/post/119280813066/the-differences-between-imagination-creativity

Chummun, B. Z., & Bisschoff, C. A. (2014). A theoretical model to measure the business success of Microinsurance in South Africa. *Journal of Economics*, *5*(1), 87–96. doi:10.1080/09765239.2014.11884987

Churchill, C., & McCord, M. J. (2012). Current trends in microinsurance. In Protecting the Poor: A Microinsurance Compendium. International Labour Organisation.

Clausen, T. H. (2020). Entrepreneurial thinking and action in opportunity development: A conceptual process model. *International Small Business Journal*, *38*(1), 21–40. doi:10.1177/0266242619872883

Coenen, L., Hondeghem, A., & Schelfhout, W. (2021). The emergence of leadership for learning beliefs among Flemish secondary school leaders. *International Journal of Leadership in Education*, 1–19. doi:10.1080/13603124.2020.1850869

Cornali, F. (2012). Effectiveness and efficiency of educational measures. *Scirp, 2*, 255-260. Retrieved from http://www.SciRP.org/journal/sm

Cotter, K. N., Pretz, J. E., & Kaufman, J. C. (2016). Applicant extracurricular involvement predicts creativity better than traditional admissions factors. *Psychology of Aesthetics, Creativity, and the Arts*, *10*(1), 2–13. doi:10.1037/a0039831

Coulson-Thomas, C. (2017). Stimulating creativity, enabling innovation and supporting entrepreneurship. *Management Services*, 26–29.

Creating Innovators. (2012). *America's Last Competitive Advantage*. Retrieved from http://www.creatinginnovators.com

Creative Oklahoma. (2021). *Dr. E. Paul Torrance.* https://creativeoklahoma.org/dr-e-paul-torrance/

Crichton, D. (2015). *Searching for the next wave of educational innovators*. TechCrunch. Retrieved from https://www.techcrunch.com/2015/06/27/-education-next-wave

Crick, J. M., & Crick, D. (2020). Coopetition and COVID-19: Collaborative business-to-business marketing strategies in a pandemic crisis. *Industrial Marketing Management*, *88*, 206–213. doi:10.1016/j.indmarman.2020.05.016

Cropley, A. (2003). *Creativity in education and Learning*. Routledge Falmer.

Cropley, D. H., Kaufman, J. C., & Cropley, A. J. (2011). Measuring creativity for innovation management. *Journal of Technology Management & Innovation*, *6*(3), 13–30. doi:10.4067/S0718-27242011000300002

Dater, A., & Merton, L. (Dirs.). (2008). *Taking Root – The Vision of Wangari Maathai.* Marlboro.

Davey, W. (2020). *Zoom Gets Stuffed: Here's How Hackers Got Hold Of 500,000 Passwords.* Forbes. Retrieved May 07, 2021, from https://www.forbes.com/sites/daveywinder/2020/04/28/zoom-gets-stuffed-heres-how-hackers-got-hold-of-500000-passwords/

Davids, M. R., Chikte, U. M. E., & Halperin, M. L. (2015). Optimising cognitive load and usability to improve the impact of e-learning in medical education [review]. *African Journal of Health Professions Education*, *7*(2), 147–152. doi:10.7196/AJHPE.569

Davidsson, P. (2015). Entrepreneurial opportunities and the entrepreneurship nexus: A re-conceptualization. *Journal of Business Venturing*, *30*(5), 674–695. doi:10.1016/j.jbusvent.2015.01.002

De Jong, M., Marston, N., & Roth, E. (2015, April 1). The eight essentials of innovation. *McKinsey Quarterly*. https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/the-eight-essentials-of-innovation

de Lucas Ancillo, A., del Val Núñez, M. T., & Gavrila, S. G. (2020). *Workplace change within the COVID-19 context: a grounded theory approach*. Economic Research-Ekonomska Istraživanja.

de Villiers Scheepers, M. J., Boshoff, C., & Oostenbrink, M. (2017). Entrepreneurial women's cognitive ambidexterity: Career and cultural influences. *South African Journal of Business Management*, *48*(4), 21–33. doi:10.4102ajbm.v48i4.40

DeBock, O., & Gelade, W. (2012). *The Demand for Microinsurance: A Literature Review.* International Labour Organization. Research paper.

Deloitte. (2017). *Unlocking new markets: Digital innovation in Africa's insurance industry*. Retrieved June 22, 2021, from https://www2.deloitte.com/content/dam/Deloitte/za/Documents/financial-services/za_Digital-Insurance-101017.pdf

Dervin, B. (1998). Sense-making theory and practice: An overview of user interests in knowledge seeking and use. *Journal of Knowledge Management*, *2*(2), 36–46. doi:10.1108/13673279810249369

Dorst, K., & Cross, N. (2001). Creativity in the design process: Co-evolution of problem–solution. *Design Studies*, *22*(5), 425–437. doi:10.1016/S0142-694X(01)00009-6

Draghici, A., Baban, C., Ivascu, L., & Sarca, I. (2015). Key Success Factors for University-Industry Collaboration in Open University. *8th Annual International Conference of Education, Research and Innovation*.

Dressler, A., & Bucher, J. (2018). *Introducing a sustainability evaluation framework based on the Sustainable Development Goals applied to four cases of South African frugal innovation*. Bus Strat Dev., doi:10.1002/bsd2.37

Dror, I. Dalal, A., & Matul, M. (2012). Emerging practices in consumer education on risk management and insurance. *Journal of Risk and Insurance Economics*, *66*(1), 3–9.

DuPuis, E. M., & Ball, T. (2013). How not what: Teaching sustainability as process. *Sustainability: Science*. *Practice and Policy*, *9*(1), 64–75.

Durnalı, M., Orakcı, Ş., & Aktan, O. (2019). The smart learning potential of Turkey's education system in the context of FATIH project. In A. Darshan Singh, S. Raghunathan, E. Robeck, & B. Sharma (Eds.), *Cases on Smart Learning Environments* (pp. 227–243). IGI Global. doi:10.4018/978-1-5225-6136-1.ch013

Durnalı, M., Orakcı, Ş., & Özkan, O. (2018). Turkey's higher education potential for human capital of eurasian region. In O. Karnaukhova, A. Udovikina, & B. Christiansen (Eds.), *Economic and Geopolitical Perspectives of the Commonwealth of Independent States and Eurasia* (pp. 201–224). IGI Global. doi:10.4018/978-1-5225-3264-4.ch009

Dutta, S., Lanvin, B., & Wunsch-Vincent, S. (Eds.). (2020). *Global Innovation Index 2020: Who Will Finance Innovation?* Cornell University, INSEAD, & World Intellectual Property Organization. https://www.wipo.int/edocs/pubdocs/en/wipo_pub_gii_2020.pdf

Dzansi, A. D. (2012). Insurance awareness through movies: an appraisal of the Kora wo Daakye movie in selected communities in Ghana. Microinsurance paper, International Labour Organisation.

Edeh, F. O., Joseph, O. A., Alamina, U. P., Osueke, N. C., & Onyemaechi, U. (2020). Entrepreneurial Innovation: A Resilience Strategy. *Sri Lankan Journal of Entrepreneurship*, *2*(1), 161–180.

Edquist, C. (Ed.). (1997). *Systems of innovation: Technologies, institutions and organizations*. Thomson Learning.

EDUTOPIA. (2012a). *George Lucas Educational Foundation.* Shanghai, China: EDUTOPIA. Retrieved from https://www.edutopia.org/education-everywhere-international-shanghai-china-video

EDUTOPIA. (2012b). *George Lucas Educational Foundation*. Singapore: EDUTOPIA. Retrieved from https://www.edutopia.org/Education-everywhere-international-Singapore-Video

Ehrismann, D., & Patel, D. (2015). Key Success factors for University-industry collaboration in open innovation. *8th Annual International Conference of Education, Research and Innovation*.

Elkington, J. (1994). Towards the sustainable corporation: Win-win-win business strategies for sustainable development. *California Management Review*, *36*(2), 90–100. doi:10.2307/41165746

Ely, R. J., & Thomas, D. A. (2001). Cultural diversity at work: The effects of diversity perspectives on work group processes and outcomes. *Administrative Science Quarterly*, *46*(2), 229–273. doi:10.2307/2667087

Ericsson, K. (2002). Attaining Excellence Through Deliberate Practice: Insights from the Study of Expert Performance. In The Pursuit of Excellence in Education (pp. 21-55). Academic Press.

Fatorachian, H., & Kazemi, H. (2021). Impact of Industry 4.0 on supply chain performance. *Production Planning and Control*, *32*(1), 63–81. doi:10.1080/09537287.2020.1712487

Fauzi, T., Santosa, P., Purwanti, Y., & Nurhayati, N. (2021). The effect of internal elements of strategic management of the organizational structure, management role and employee behavior on corporate mission. *Management Science Letters*, *11*(4), 1189–1196. doi:10.5267/j.msl.2020.11.020

Felber, J. (2020, August 18). *The Importance Of Creativity In Business.* Forbes Small Business. https://www.forbes.com/sites/forbesbusinesscouncil/2020/08/18/the-importance-of-creativity-in-business/?sh=48728393e7d7

Ferreira, M., Cooper, B., Gray, J., & Schlemmer, L. (2020). *Onboarding challenges*. Retrieved March 07, 2021, from https://cenfri.org/articles/insurance-operations-and-covid-19-remote-onboarding-challenges/

Fields, Z., Bucher, J., & Weller, A. (2019). *Imagination, Creativity, and Responsible Management in the Fourth Industrial Revolution*. IGI Global. https://www.igi-global.com/book/imagination-creativity-responsible-management-fourth/www.igi-global.com/book/imagination-creativity-responsible-management-fourth/219370

Fields, Z., & Atiku, S. O. (2017). 'Collective Green Creativity and Eco-Innovation as key drivers of Sustainable Business Solutions in Organisations. In *Collective Creativity for Responsible and Sustainable Business Practice* (pp. 1–25). IGI Global. doi:10.4018/978-1-5225-1823-5.ch001

Fingerhut, J., Gomez-Lavin, J., Winklmayr, C., & Prinz, J. J. (2021). The aesthetic self: The ımportance of aesthetic taste in music and art for our perceived identity. *Frontiers in Psychology*, *11*, 4079. doi:10.3389/fpsyg.2020.577703 PMID:33767641

Fishbein, M., & Ajzen, I. (1977). Belief, attitude, intention, and behavior: An introduction to theory and research. *Philosophy & Rhetoric*, *10*(2).

Fisher, K., Hirsh-Pasek, K., Gollinkoff, R., Singer, D., & Berk, L. (2011). Playing Around in Schools: Implications for Learning and Educational Policy. Oxford Library of Psychology, 341-346.

Florida, R. (2004). The rise of the creative class and how it's transforming work, leisure, community and everyday life. Basic Books.

Florida, R. (2004, October). America's Looming Creativity Crisis. *Harvard Business Review.* https://hbr.org/2004/10/americas-looming-creativity-crisis

Freeman, R., Freeman, C., & Freeman, S. (1987). *Technology, policy, and economic performance: lessons from Japan*. Burns & Oates.

Frérot, A. (2016, January 23). *The future of business will be defined by collaboration.* World Economic Forum. https://www.weforum.org/agenda/2016/01/the-future-of-business-will-be-defined-by-collaboration

Frey, C. B., & Osborne, M. A. (2017). The future of employment: How susceptible are jobs to computerisation? *Technological Forecasting and Social Change*, *114*, 254–280. doi:10.1016/j.techfore.2016.08.019

Gajda, A., Beghetto, R. A., & Karwowski, M. (2017). Exploring Creative Learning in the Classroom: A Multi-method Approach. *Thinking Skills and Creativity*, *24*, 250–267. doi:10.1016/j.tsc.2017.04.002

Gajda, A., Karwowski, M., & Beghetto, R. (2017). Creativity and Academic Achievement: A meta-analysis. *Journal of Educational Psychology*, *109*(2), 269–299. doi:10.1037/edu0000133

Gao, B. M. (2012). Creativity is thinking up new things. Innovation is doing new things. *Schulich Leader Scholarship*. Retrieved 17 March 2021 from https://www.schulichleaders.com/Creativity-thinking-new-things-innovation-doing-new-things

Garside, C. (1996). Look who's talking: A comparison of lecture and group discussion teaching strategies in developing critical thinking skills. *Journal of Communication Education*, *45*(3), 212–227. doi:10.1080/03634529609379050

Gharib, M. (2020, January 11). *Feeling Artsy? Here's How Making Art Helps Your Brain.* NPR. https://www.npr.org/sections/health-shots/2020/01/11/795010044/feeling-artsy-heres-how-making-art-helps-your-brain

Ghosh, A. (2020). *Impact of Global Financial Crisis in the Life Insurance in India.* Retrieved March 07, 2021, http://ssrn.com/abstract=1639122

Giménez RocheG.CalceiD. (2020). Bypassing Uncertainty: Externally Enabled Routines and Entrepreneurial Judgment. Available at SSRN 3646972. doi:10.2139/ssrn.3646972

Giorgio, T., Pyka, A., & Scholz, R. (2014). R&D and Knowledge Dynamics in University-Industry relationships in Biotech and Pharmaceuticals: An Agent-Based Model. *International Journal of Biotechnology*.

Girourx, H. A., & Schimdt, M. (2004). Closing the achievement gap: A metaphor for children left behind. *Journal of Educational Change*, *5*(3), 213–228. doi:10.1023/B:JEDU.0000041041.71525.67

Glaveanu, V., & Beghetto, R. (2017). Creative contradictions in Education: cross-disciplinary paradoxes and perspectives. Springer International Publishing.

Godin, B. (2009). National innovation system: The system approach in historical perspective. *Science, Technology & Human Values*, *34*(4), 476–501. doi:10.1177/0162243908329187

González-Cruz, T., & Devece, C. (2018). Entrepreneurial innovation, judgment, and decision-making as a virtuous process. *The International Entrepreneurship and Management Journal*, *14*(2), 245–248. doi:10.100711365-018-0510-y

GoodTherapy. (2015, August 10). *Imagination.* https://www.goodtherapy.org/blog/psychpedia/imagination

Goos, M., & Manning, A. (2007). Lousy and lovely jobs: The rising polarization of work in Britain. *The Review of Economics and Statistics*, *89*(1), 118–133. doi:10.1162/rest.89.1.118

Gray, J., & Wiechers, T. (2020). *Africa's insurance fails to deliver on COVID-19.* Retrieved March 07, 2021, from https://cenfri.org/articles/africas-insurance-fails-to-deliver-on-covid-19/

Gregoire, J. (2016). Understanding Creativity in Mathematics for Improving Mathematical Education. *Journal of Cognitive Education and Psychology*, *15*(1), 24–36. doi:10.1891/1945-8959.15.1.24

Guan, J., & Zaho, Q. (2013). The Impact of University-Industry Collaboration Networks on Innovation in Nanobiopharmaceuticals, Technol. *Forecast*, 1271-1286.

Guilford, J. (1950). Creativity. *American Psychologist*, 469-479.

HablerB. (2020). Continue or reboot? Overarching options for education responses to COVID-19 in low and middle-income countries. Zenodo. doi:10.5281/zenodo.3753513

Hall, C. M., Scott, D., & Gössling, S. (2020). Pandemics, transformations and tourism: Be careful what you wish for. *Tourism Geographies*, *22*(3), 577–598. doi:10.1080/14616688.2020.1759131

Harper, S. (2012). The leader coach: A model of multi-style leadership. *Journal of Practical Consulting*, *4*(1), 22–31.

Harris, A. (2012). Distributed leadership: Implications for the role of the principal. *Journal of Management Development*, *31*(1), 7–17. doi:10.1108/02621711211190961

Harvard, T. H. Chan School of Public Health D-Lab. (2021). *Whole Life: Designing Life After Covid-19.* Retrieved via https://www.hsph.harvard.edu/d-lab/designing-life-after-covid-19/

Heick, T. (2016). *12 Barriers to Innovation in Education.* Retrieved from TeachThought: https://www.teachthought.com/the-future-of-learnig/disruption-innovation/12-barriers-innovation-education

Henriksen, D., & P, M. (2018). Creativity, Uncertainty and Beautiful Risks: A Conversation with Dr Ronald Beghetto. *TechTrends*, 541-547.

Henriksen, D., & Mishra, P. (2015). We teach who we are: Creativity in the lives and practices of accomplished teachers. *Teachers College Record*, *117*, 070303.

Henriksen, D., Mishra, P., & Fisser, P. (2016). Infusing creativity and technology in 21st-century education: A systemic view for change. *Journal of Educational Technology & Society*, *19*(3), 27–37.

Henriksen, D., Mishra, P., & Mehta, R. (2015). Novel, Effective, Whole: Towards a new framework for evaluations of creative products. *Journal of Technology and Teacher Education*, 455–478.

Higgins, M., & Reeves, D. (2006). Creative thinking in planning: How do we climb outside the box? *The Town Planning Review*, *77*(2), 221–245. doi:10.3828/tpr.77.2.6

Hill, L. A., Brandeau, G., Truelove, E., & Lineback, K. (2014). *Collective Genius: The Art and Practice of Leading Innovation*. Harvard Business Review Press.

Hill, S. A., & Birkinshaw, J. M. (2010). Idea sets: Conceptualizing and measuring a new unit of analysis in entrepreneurship research. *Organizational Research Methods*, *13*(1), 85–113. doi:10.1177/1094428109337542

Hoffman, A., & Holzhuter, J. (2012). The Evolution of Higher Education: innovation as natural selection. American Council of Education.

Hogan, M., Harney, O., & Broome, B. (2015). Catalyzing collaborative learning and collective action for positive social change through systems science education. In *The Routledge International Handbook of Research on Teaching Thinking*. Routledge.

Hogan, M., Harney, O., Moroney, M., Hanlon, M., Khoo, S.-M., Hall, T., Pilch, M., Pereira, B., Lente, E. V., Hogan, V., O'Reilly, J., Groarke, J., Razzante, R., Durand, H., & Broome, B. (2020). A group dynamics framework for 21st century collective intelligence facilitators. *Systems Research and Behavioral Science*. Advance online publication. doi:10.1002res.2688

Hollowman, C. (2012). *The social media MBA: Your Competitive Edge in Social Media Strategy Development & Delivery. West Essex*. John Wiley & Sons Ltd.

Hopkins, B. (Host). (2018). *Kyung Hee Kim on 'The Creativity Crisis* [Audio podcast]. https://www.robhopkins.net/2018/09/20/kyung-hee-kim-on-the-creativity-crisis/

Internet World Statistics. (2020). *World Internet Users and 2020 Population Stats.* Retrieved April 23, 2021, from https://www.internetworldstats.com/stats2.htm

Iqbal, A., Khan, A., & Senin, A. (2015). Reinforcing the National innovation system of Malaysia based on University-Industry Research Collaboration: A System thinking Approach. *International Journal of Management Sciences and Business*, 6-15.

Jamwal, A., Agrawal, R., Sharma, M., Kumar, V., & Kumar, S. (2021). Developing a sustainability framework for Industry 4.0. *Procedia CIRP*, *98*, 430–435. doi:10.1016/j.procir.2021.01.129

Jansen, J. (2020). *Let's face facts, the 2020 school year is lost. So what to do?* Retrieved March 07, 2021, from https://select.timeslive.co.za/ideas/2020-04-09-lets-face-facts-the-2020-school-year-is-lost-so-what-to-do/

Jarabkova, J., Chrenekova, M., & Rohacikova, O. (2019). University and Practice-Cooperation in Research in and Science: Case Study of the Slovak University of Agriculture in Nitra. *Quality Innovation Prosperity*, 136-154.

Jaschik, S. (2015, January 20). *Well-prepared in their own eyes*. Retrieved from Inside Higher Education: https://www.insidehighered.com/news/2015/01/20

Jassem, S., & Razzak, M. R. (2020). Entrepreneurship in Urban Jungles through High-Tech Vertical Farming. In *Entrepreneurship*. IntechOpen.

Johnson, T., Smith, S., Ross, K., Yang, C., & Patterson, T. (2019). *A Calculated Transformation The actuarial workforce of the future can provide even more value to employers*. Available at: https://theactuarymagazine.org/a-calculated-transformation/

Jones, P. H. (2014). Systemic Design Principles for Complex Social Systems. In G. S. Metcalf (Ed.), *Social Systems and Design* (pp. 91–128). Springer Japan., doi:10.1007/978-4-431-54478-4_4

Jung, I. (2019). *Introduction to theories of open and distance education. In Open and distance theory revisited: Implications for the digital era*. Springer. doi:10.1007/978-981-13-7740-2

Kappel, R. (1999). Entwicklungsstrategien für Wirtschaft und Gesellschaft. *Bundeszentrale Für Politische Bildung (BpB). Informationen Zur Politischen Bildung, 264*.

Karwowski, M. (2019). Classroom Creative Climate: From a static to a dynamic perspective. The Palgrave Handbook of Social Creativity Research, 487-499.

Karwowski, M. (2018). The flow of Learning. *Europe's Journal of Psychology*, *14*(2), 291–295. doi:10.5964/ejop.v14i2.1660 PMID:30008947

Karwowski, M., Jankowska, D. M., Brzeski, A., Czerwonka, M., Gajda, A., Lebuda, I., & Beghetto, R. A. (2020). Delving into creativity and learning. *Creativity Research Journal*, *32*(1), 4–16. do i:10.1080/10400419.2020.1712165

Karwowski, M., Lebuda, I., Szumski, G., & Firkowska-Mankiewicz, A. (2017). From moment-to-moment to day-to-day: Experience sampling and dairy investigation in adults' everyday creativity. *Psychology of Aesthetics, Creativity, and the Arts*, *11*(3), 309–324. doi:10.1037/aca0000127

Katz-Buonincontro, J. (2008). Using the arts to promote creativity in leaders. *Journal of Research on Leadership Education*, *3*(1), 1–27. doi:10.1177/194277510800300103

Keith, S. (2015). A Call to Action: The Challenges of Creative Teaching and Learning. *Teachers College Record*, 1–33.

Kenney, R. F. M., & Florida, R. (2000). Silicon Valley and Route 128 won't save us. *California Management Review*, *33*(1), 68–88.

Kerres, M. (2020). Against All Odds: Education in Germany Coping with Covid-19. *Postdigital Science and Education*, *1-5*(3), 690–694. Advance online publication. doi:10.100742438-020-00130-7

Khalil, M., Prinsloo, P., & Slade, S. (2018). User Consent in MOOCs – Micro, Meso, and Macro Perspectives. *International Review of Research in Open and Distributed Learning*, *19*(5). Advance online publication. doi:10.19173/irrodl.v19i5.3908

Khatib, F., & DiMaio, F. (2011). *Crystal structure of a monomeric retroviral protease solved by protein folding game players*. Retrieved via https://www.nature.com/nsmb/journal/v18/n10/full/nsmb.2119.html

Kilimani, N. (2017). Youth Employment in Developing Economies: Evidence on Policies and Interventions. *IDS Bulletin*, *47*(3). Advance online publication. doi:10.19088/1968-2017.124

Kim, K. H. (2017). *The Creativity Crisis: It's Getting Worse.* Idea to Value. https://www.ideatovalue.com/crea/khkim/2017/04/creativity-crisis-getting-worse/

Kioupi, V., & Voulvoulis, N. (2019). Education for sustainable development: A systemic framework for connecting the SDGs to educational outcomes. *Sustainability*, *11*(21), 6104. doi:10.3390u11216104

Kirzner, I. M. (1997). Entrepreneurial discovery and the competitive market process: An Austrian approach. *Journal of Economic Literature*, *35*(1), 60–85.

Kolb, A. Y., & Kolb, D. A. (2009). Experiential Learning Theory: A Dynamic, Holistic Approach to Management Learning, Education and Development. In The SAGE Handbook of Management Learning, Education and Development (pp. 42–68). SAGE Publications Ltd. doi:10.4135/9780857021038.n3

Kolb, D. A., Boyatzis, R. E., & Mainemelis, C. (2014). Experiential Learning Theory: Previous Research and New Directions. In R. J. Sternberg & L. Zhang (Eds.), Perspectives on Thinking, Learning, and Cognitive Styles (pp. 227–248). Routledge. doi:10.4324/9781410605986-9

Kolb, A. Y., & Kolb, D. A. (2005). Learning styles and learning spaces: Enhancing experiential learning in higher education. *Academy of Management Learning & Education*, *4*(2), 193–212. doi:10.5465/amle.2005.17268566

Kolb, D. A. (2007). *The Kolb learning style inventory*. Hay Resources Direct Boston.

Kopp, U. (2013). Systemische Nachhaltigkeitskompetenzen für Führungskräfte – Erfahrungen mit Aufstellungsarbeit in der Managementaus- und weiterbildung. *Die Unternehmung*, *67*(2), 126–151. doi:10.5771/0042-059X-2013-2-126

Koropets, O. A., & Tukhtarova, E. K. (2021). The ımpact of advanced ındustry 4.0 technologies on unemployment in Russian regions. *Ekonomika Regiona*, *17*(1), 182–196. doi:10.17059/ekon.reg.2021-1-14

Kotze, D. M., Mouton, J., Barkhuizen, N., & de Jager, H. (2020). Talent Retention Of Educators In Selected Private Schools. *The International Journal Of Social Sciences And Humanity Studies*, *12*(2), 306–320.

Kruger, F. P. (2016). Preliminary thoughts on the relevance of the research field of cognition for Practical Theology: Original research. *Verbum et Ecclesia*, *37*(1), 1–12. doi:10.4102/ve.v37i1.1535

Kruger, F., & De Klerk, B. (2016). Continuous formation of liturgy through social cognition: Original research. *Hervormde Teologiese Studies*, *72*(3), 1–10. doi:10.4102/hts.v72i3.3170

Kuhlcke, K. (2020). *Data in real time: How digitalisation is transforming financial policies in Africa.* Retrieved March 07, 2021, from https://cenfri.org/interviews/data-in-real-time-how-digitalisation-is-transforming-financial-policies-in-africa/

Kuknor, S., & Bhattacharya, S. (2021). Organizational Inclusion and Leadership in Times of Global Crisis. *Australasian Accounting*. *Business and Finance Journal*, *15*(1), 93–112.

Kurz, V., Hüsig, S., & Dowling, M. (2018). What drives different employee types of innovative behaviour? Development and test of an integrative model of employee driven innovation in German firms. *International Journal of Entrepreneurship and Innovation Management*, *22*(4–5), 397–426. doi:10.1504/IJEIM.2018.092955

Lall, S., & Pietrobell, C. (2002). *Failing to compete*. Edward Elgar Publishing. doi:10.4337/9781781950579

Lans, T., Baggen, Y., & Ploum, L. J. L. (2018). Towards more synergy in entrepreneurial competence research in entrepreneurship education. In *A research agenda for entrepreneurship education* (pp. 224–242). Edward Elgar Publishing. doi:10.4337/9781786432919.00018

Laurence, S. (2013). Topics and Trends in Current Science Education. *Springer Link*, 37-58.

Leal Filho, W., Raath, S., Lazzarini, B., Vargas, V. R., De Souza, L., Anholon, R., Quelhas, O. L. G., Haddad, R., Klavins, M., & Orlovic, V. L. (2018). The role of transformation in learning and education for sustainability. *Journal of Cleaner Production*, *199*, 286–295. doi:10.1016/j.jclepro.2018.07.017

Lee, N. R., & Kotler, P. (2012). *Social Marketing* (4th ed.). Sage Publications.

Legrand, W., Gardetti, M. Á., Nielsen, R. S., Johnson, C., & Ergul, M. (2020). *Social Entrepreneurship in Hospitality: Principles and Strategies for Change*. Routledge. doi:10.4324/9781315187365

Lene, T. (2014). A Situated Model of Creative Learning. *European Educational Research Journal*, 107–116.

Levasseur, A. (2012, July 17). *Mind Shift*. Retrieved from kqed: http://www.kqed.org/mindshift/2012/07/17

Levin, K., Cashore, B., Bernstein, S., & Auld, G. (2012). Overcoming the tragedy of super wicked problems: Constraining our future selves to ameliorate global climate change. *Policy Sciences*, *45*(2), 123–152. doi:10.100711077-012-9151-0

Li, C., & Lalani, F. (2020). *The COVID-19 pandemic has changed education forever. This is how.* World Economic Forum. https://www.weforum.org/agenda/2020/04/coronavirus-education-global-covid19-online-digital-learning/

Llyods. (2020). *Microinsurance on the Roadmap to Financial Inclusion.* Retrieved March 07, 2021, from https://www.lloyds.com/news-and-insight/risk-insight/reports/microinsurance/insurance-in-developing-countries

Lombardi, R., Tiscini, R., Trequattrini, R., & Martiniello, L. (2020). *Strategic entrepreneurship: Personal values and characteristics influencing SMEs' decision-making and outcomes. The Gemar Balloons case*. Academic Press.

Lundvall, B. Å., Johnson, B., Andersen, E. S., & Dalum, B. (2002). National systems of production, innovation and competence building. *Research Policy*, *31*(2), 213–231. doi:10.1016/S0048-7333(01)00137-8

Lundvall, B.-Å. (Ed.). (1992). *National systems of innovation: Towards a theory of innovation and interactive learning*. Pinter Publishers.

Maathai, W. (2006). *The Green Belt Movement*. Lantern Books.

Maathai, W. (2010). *Replenishing the Earth*. Doubleday.

Magdas, A. (2020). *Microinsurance on the Roadmap to Financial Inclusion.* Retrieved March 07, 2021, from https://www.centerforfinancialinclusion.org/microinsurance-on-the-road-map-to-financial-inclusion

Malairaja, C., & Zawdie. (2008). *Technology Analysis and Strategic Management*. Academic Press.

Marcus, J. (2012). Old School: Four Hundred Years of Resistance to Change. In B. Wildavsky, A. Kelly, & K. Carey (Eds.), *Re-inventing Higher Education: The Promise of Innovation* (pp. 41–72). Harvard Education Press.

Mark, S., & Kim, K. (2017). Creative Pedagogy: A Case for Teachers Creative Learning being at the Centre. *Teaching Education*, 317–332.

Matic, A. (2016). *Microwork: Theory, Models and Mechanics for enabling impact through aggregate action*. OCAD University. http://openresearch.ocadu.ca/id/eprint/1533/

Matic, G. (2017). *Collaboration for Complexity – Team Competencies for Engaging Complex Social Challenges*. OCAD University. http://openresearch.ocadu.ca/id/eprint/1990/

Matic, G. (2020). Collaboration Competencies for Complex Social Challenges. *Proceedings of Relating Systems Thinking and Design (RSD9) 2020 Symposium*.

McBurnieC.AdamT.KayeT.HablerB. (2020). Zero-rating educational content in low and middle-income countries [The EdTech Hub Helpdesk Response]. doi:10.5281/zenodo.3784940

Medina, J., & Lerer, L. (2020). *When Mom's Zoom Meeting Is the One That Has to Wait.* Retrieved March 07, 2021, from https://www.nytimes.com/2020/04/22/us/politics/women-coronavirus-2020.html

Meintjes, A. (2015). Creativity and flexibility: Essential skills in training learners for a potential entrepreneurial career. *Journal of Contemporary Management*, *12*(1), 268–288. https://journals.co.za/content/jcman/12/1/EJC173869

Merskin, D. L. (2020). *The Sage International Encyclopedia of Mass Media and Society*. SAGE. doi:10.4135/9781483375519

Microinsurance Network. (2020). *Facts on Microinsurance.* Retrieved March 07, 2021, from https://microinsurancenetwork.org/

Miller, E. D. (2020). The COVID-19 Pandemic Crisis: The Loss and Trauma Event of Our Time. *Journal of Loss and Trauma*, *25*(6-7), 1–13. doi:10.1080/15325024.2020.1759217

Miller, R., Bell, R. G., Fodness, D., & Whittington, J. L. (2017). Sustainability through stakeholder value creation: Redesigning an MBA curriculum. In *Handbook of Sustainability in Management Education*. Edward Elgar Publishing. doi:10.4337/9781785361241.00022

Misch, A., & Tobin, P. K. J. (2006). Knowledge management and cognitive theory: An African case study. *Acta Commercii*, *6*(1), 133–146. doi:10.4102/ac.v6i1.103

Mishra, P., & Koehler, M. (2008). *Introducing Technological Pedagogical Content Knowledge.* Annual Meeting of American Educational Research Association.

Mishra, P., & Henriksen, D. (2013). A New Approach to Defining and Measuring Creativity: Rethinking Technology and Creativity in the 21st Century. *TechTrends*, *57*(5), 10–13. doi:10.100711528-013-0685-6

Mitchell, S. F., & Arevalo, J. A. (2017). Conclusion. In *Handbook of Sustainability in Management Education*. https://www.elgaronline.com/view/edcoll/9781785361234/9781785361234.00038.xml

Mitive, A. (2009). *Evaluation of an Academic-Industry Research Collaboration*. Social Science Research Network.

Mohammad, S. K., & Mohammad, A. A.-F. (2015). Fostering University-Industry Collaboration in Saudi Arabia through Technology Innovation Centers. *Tailor & Francis Online*, 224-237.

Montañés-Del-Río, M. Á., & Medina-Garrido, J. A. (2020). Determinants of the Propensity for Innovation among Entrepreneurs in the Tourism Industry. *Sustainability*, *12*(12), 5003. doi:10.3390u12125003

Mutavati, A., Zaman, M., & Olajide, D. (2020, April 27). *Fighting the 'shadow pandemic' of violence against women & children during COVID-19.* Africa Renewal. Retrieved March 07, 2021, from https://www.un.org/africarenewal/web-features/coronavirus/fighting-%E2%80%98shadow-pandemic%E2%80%99-violence-against-women-children-during-covid-19

Mutch, C. (2020). *Crisis leadership: Evaluating our leadership approaches in the time of COVID-19*. Academic Press.

Muthukrishna, M., & Henrich, J. (2016). Innovation in the collective brain. *Philosophical Transactions of the Royal Society B: Biological Sciences, 371*(1690). doi:10.1098/rstb.2015.0192

Nabi, G., Walmsley, A., & Akhtar, I. (2019). Mentoring functions and entrepreneur development in the early years of university. *Studies in Higher Education*. Advance online publication. doi:10.1080/03075079.2019.1665009

Naidoo, R., & Fisher, B. (2020). Reset sustainable development goals for a pandemic world. *NATNews*, *583*(7815), 198–201. doi:10.1038/d41586-020-01999-x PMID:32632244

National Treasury of South Africa. (2019). *The South African Microinsurance Regulatory Framework Report*. Retrieved May 07, 2021, from http://www.treasury.gov.za

Ndiaye, N., Abdul Razak, L., Nagayev, R., & Ng, A. (2018). Demystifying small and medium enterprises' (SMEs) performance in emerging and developing economies. *Borsa Istanbul Review*, *18*(4), 269–281. doi:10.1016/j.bir.2018.04.003

Nelson, R. R. (Ed.). (1993). *National innovation systems: A comparative analysis*. Oxford University Press.

Ngoc Su, D., Luc Tra, D., Thi Huynh, H. M., Nguyen, H. H. T., & O'Mahony, B. (2021). Enhancing resilience in the Covid-19 crisis: Lessons from human resource management practices in Vietnam. *Current Issues in Tourism*, 1–17. doi:10.1080/13683500.2020.1863930

Nidhi, A. (2018). A Study of Innovation in Instructional Strategies and Designs for Quality Enrichment in Higher Education. *Cosmos An International Journal of Arts and Higher Education*, 1-23.

Niemi, H., Multisilta, J., Lipponen, L., & Vivitsou, M. (2014). *Finnish Innovation and Technologies in Schools: A guide towards New Ecosystems of Learning*. Sense Publishers. doi:10.1007/978-94-6209-749-0

Nieuwenhuizen, C., & Nieman, G. (2018). *Entrepreneurship: A South African perspective* (4th ed.). Van Schaik Publishers.

Nilsson, M., Griggs, D., & Visbeck, M. (2016). Policy: Map the interactions between Sustainable Development Goals. *NATNews*, *534*(7607), 320–322. doi:10.1038/534320a PMID:27306173

Nobre, F. S., Arevalo, J. A., & Mitchell, S. F. (2017). Sustainability learning processes: Concepts, benchmarking, development, and integration. In *Handbook of Sustainability in Management Education*. Edward Elgar Publishing. doi:10.4337/9781785361241.00020

Nordman, E. E., Christopher, N., & Jakobcic, Y. (2017). Sustainability as a University Value: A journey from awareness to behavior change. In *Handbook of Sustainability in Management Education*. Edward Elgar Publishing. doi:10.4337/9781785361241.00014

Norman, D. (2013). *The design of everyday things: Revised and expanded edition*. Basic books.

Oatley, K., & Johnson-laird, P. N. (1987). Towards a Cognitive Theory of Emotions. *Cognition and Emotion*, *1*(1), 29–50. doi:10.1080/02699938708408362

Occhipinti, J. D. (2003). Active and accountable: Teaching comparative politics using cooperative team learning. *Journal of Political Science and Politics*, *36*(2), 69–74. doi:10.1017/S1049096503001719

Olivier, S., Hölscher, F., & Williams, C. (2020). *Agile Leadership for Turbulent Times: Integrating Your Ego, Eco and Intuitive Intelligence*. Routledge. doi:10.4324/9781003029595

Ones, D. S., & Dilchert, S. (2012). Environmental sustainability at work: A call to action. *Industrial and Organizational Psychology: Perspectives on Science and Practice*, *5*(4), 444–466. doi:10.1111/j.1754-9434.2012.01478.x

Opoku, D.G.J., Agyekum, K., & Ayarkwa, J. (2019). Drivers of environmental sustainability of construction projects: a thematic analysis of verbatim comments from built environment consultants. *International Journal of Construction Management*, 1-9.

Orakcı, Ş. (2020). The future of online learning and teaching in higher education. In Global Approaches to Sustainability Through Learning and Education. Hershey, PA: IGI Global. doi:10.4018/978-1-7998-0062-0.ch003

Orakcı, Ş. (2021). Exploring the relationships between cognitive flexibility, learner autonomy, and reflective thinking. *Thinking Skills and Creativity*, *41*, 1–12. doi:10.1016/j.tsc.2021.100838

Orakcı, Ş. (2021). Teachers' Reflection and Level of Reflective Thinking on the Different Dimensions of their teaching practice. *International Journal of Modern Education Studies*, *5*(1), 117–145.

Orakcı, Ş., Durnalı, M., & Aktan, O. (2019). Fostering critical thinking using instructional strategies in English classes. In S. P. Robinson & V. C. Knight (Eds.), *Teacher education pedagogy and the importance of critical thinking and conceptualization*. IGI Global. doi:10.4018/978-1-5225-7829-1.ch016

Orakcı, Ş., & Gelişli, Y. (2021). Educational policy actions in the times of Covid-19 and suggestions for future applications in Turkey. In L. Kyei-Blankson, J. Blankson, & E. Ntuli (Eds.), *Handbook of Research on Inequities in Online Education During Global Crises* (pp. 475–493). IGI Global. doi:10.4018/978-1-7998-6533-9.ch024

Organisation for Economic Co-operation and Development. (2019). *Education at a Glance 2019: OECD indicators*. OECD Publishing. doi:10.1787/f8d7880d-

Oztemel, E., & Gursev, S. (2020). Literature review of Industry 4.0 and related technologies. *Journal of Intelligent Manufacturing*, *31*(1), 127–182. doi:10.100710845-018-1433-8

Padayachee, K. (2015). An Insider Threat Neutralisation Mitigation model predicated on Cognitive Dissonance (ITNMCD). *South African Computer Journal, 56*(1), 50-79. Retrieved from https://journals.co.za/content/comp/56/1/EJC173454

Pappas, J. B., & Pappas, E. C. (2015). The Sustainable Personality: Values and Behaviors in Individual Sustainability. *International Journal of Higher Education*, *4*(1), 12–21.

Patterson, L. (2018, June 13). *The role of creativity in entrepreneurship*. AlphaGamma. https://www.alphagamma.eu/entrepreneurship/role-creativity-in-entrepreneurship/

Peckham, M. (2011). *Time Magazine: Foldit Gamers Solve AIDS Puzzle That Baffled Scientists for a Decade*. Retrieved via https://techland.time.com/2011/09/19/foldit-gamers-solve-aids-puzzle-that-baffled-scientists-for-decade/

Pless, N., & Maak, T. (2004). Building an inclusive diversity culture: Principles, processes and practice. *Journal of Business Ethics*, *54*(2), 129–147. doi:10.100710551-004-9465-8

Plunker, J. A., Beghetto, R. A., & Dow, G. T. (2010). Why isn't creativity more important to educational psychologists? Potentials, pitfalls, and future directions in creativity research. *Educational Psychologist*, *39*(2), 83–96. doi:10.120715326985ep3902_1

Power, N., Beattie, G., & McGuire, L. (2017). Mapping our underlying cognitions and emotions about good environmental behavior: Why we fail to act despite the best of intentions. *Semiotica*, *2017*(215), 193–234. doi:10.1515em-2016-0035

Protazio, S. (2020). Retrieved March 07, 2021, from https://cenfri.org/articles/opportunities-and-challenges-to-innovation-in-the-ugandan-insurance-market/

Puccio, G. J., Mance, M., & Murdock, M. C. (2010). *Creative Leadership: Skills That Drive Change* (2nd ed.). Sage Publications.

Qamar, M. A. (2012). *The Role of Microfinance in Reducing Vulnerability: The Case of District Rajanpur, Punjab, Pakistan* (Unpublished doctoral thesis). University of Gloucestershire.

Qazi, M. (2021). *Launching India's Microinsurance Revolution: How the Sector Can Build Upon Growing Customer Awareness Due to COVID-19.* Retrieved March 07, 2021, from https://nextbillion.net/india-microinsurance-covid-19/

Ramoglou, S. (2021). Knowable opportunities in an unknowable future? On the epistemological paradoxes of entrepreneurship theory. *Journal of Business Venturing*, *36*(2), 106090. doi:10.1016/j.jbusvent.2020.106090

Rashid, L. (2019). Entrepreneurship Education and Sustainable Development Goals: A literature Review and a Closer Look at Fragile States and Technology-Enabled Approaches. *Sustainability*, *11*(19), 5343. doi:10.3390u11195343

Rey, G. (1983). Concepts and stereotypes. *Cognition*, *15*(1), 237–262. doi:10.1016/0010-0277(83)90044-6 PMID:6686511

Rickards, T., & Moger, S. (2000). Creative leadership processes in project team development: An alternative to Tuckman's stage model. *British Journal of Management*, *11*(4), 273–283. doi:10.1111/1467-8551.00173

Rimanoczy, I. (2017). Developing the sustainability mindset. In *Handbook of Sustainability in Management Education*. Edward Elgar Publishing. doi:10.4337/9781785361241.00019

Rindova, V., & Courtney, H. (2020). To Shape or Adapt: Knowledge Problems, Epistemologies, and Strategic Postures under Knightian Uncertainty. *Academy of Management Review*, *45*(4), 787–807. doi:10.5465/amr.2018.0291

Rinehart-Smit, K., & van Vuuren, J. P. (2021). *Covid-19 catalyses insurance innovation*. Retrieved March 07, 2021, from https://cenfri.org/articles/covid-19-catalyses-insurance-innovation

Ripke, M., & Huston, A. C. (2006). Poverty: Consequences for children. In L. Balter & C. Tamis-LeMonda (Eds.), *Child psychology: A handbook of contemporary issues* (Vol. 2, pp. 521–544). Psychology Press.

Rittel, H. W. J., & Webber, M. M. (1973). Dilemmas in a General Theory of Planning. *Policy Sciences*, *4*(2), 155–169. doi:10.1007/BF01405730

Ritter, T., Wilkinson, I. F., & Johnston, W. J. (2002). Measuring network competence: Some international evidence. *Journal of Business and Industrial Marketing*, *17*(2/3), 119–138. doi:10.1108/08858620210419763

Robichaud, L. B., & Anantatmula, V. S. (2011). Greening project management practices for sustainable construction. *Journal of Management Engineering*, *27*(1), 48–57. doi:10.1061/(ASCE)ME.1943-5479.0000030

Rodriguez, P. R. (2017). *Effectiveness of YouTube Advertising: A Study of Audience Analysis* (Thesis). Rochester Institute of Technology.

Rogers, C. R. (1983). *Freedom to learn for the 80s*. Charles E. Merrill Publishing Company.

Rohs, M., & Ganz, M. (2015). MOOCs and the claim of education for all: A disillusion by empirical data. *International Review of Research in Open and Distance Learning*, *16*(6). Advance online publication. doi:10.19173/irrodl.v16i6.2033

Rosly, O., & Armad, F. O. (2012). University and Industry Collaboration: Towards a Successful and Sustainable Partnership. *Procedia: Social and Behavioral Sciences*, 575–579. http://www.sciencedirect.com

Rotatori, D., Lee, E. J., & Sleeva, S. (2020). The evolution of the workforce during the fourth industrial revolution. *Human Resource Development International*, 1–12. doi:10.1080/13678868.2020.1767453

Rowan, N. J., & Galanakis, C. M. (2020). Unlocking challenges and opportunities presented by COVID-19 pandemic for cross-cutting disruption in agri-food and green deal innovations: Quo Vadis? *The Science of the Total Environment*, *748*, 141362. doi:10.1016/j.scitotenv.2020.141362 PMID:32823223

Roy, A. (2021). *Microinsurance role and issues during the covid-19 crisis.* Retrieved March 07, 2021, from https://www.magzter.com/stories/Business/The-Management-Accountant/Micro-Insurance-Role-And-Issues-During-The-Covid-19-Crisis

Russell, T. L. (1999). *The no significant difference phenomenon: As reported in 355 research reports, summaries and papers*. North Carolina State University.

Ruysenaar, S. (2021). Thinking Critically about the Fourth Industrial Revolution as a problem. In Z. Fields (Ed.), *Using global collective intelligence and creativity to solve wicked problems* (pp. 1–26). IGI Global. doi:10.4018/978-1-7998-2385-8.ch001

Sachs, J. D., Kroll, C., Lafortune, G., Fuller, G., & Woelm, F. (2021). *The Decade of Action for the Sustainable Development Goals: Sustainable Development Report 2021*. Cambridge University Press. https://www.sustainabledevelopment.report

Sachs, J., Schmidt-Traub, G., Kroll, C., Lafortune, G., Fuller, G., & Woelm, F. (2020). Sustainable Development Report 2020. *The Sustainable Development Goals and COVID-19*, 1–99.

Sachs, J., Schmidt-Traub, G., Kroll, C., Lafortune, G., & Fuller, G. (2019). *Sustainable Development Report 2019. Bertelsmann Stiftung and Sustainable Development Solutions Network*. SDSN.

Sadana, D., Gupta, R. K., Jain, S., Kumaran, S. S., & Rajeswaran, J. (2021). Correlates of Creativity: An Association Between Creativity, Personality, and Intelligence, PsyArXiv *Preprint*, 1-22. 10.31234/ doi:osf.io/qdby6

Sahasranamam, S. (2020). *Innovation and entrepreneurship amidst coronavirus: a hybrid innovation network response*. Academic Press.

Santos, S., & Liguori, E. (2019). Entrepreneurial self-efficacy and intentions: Outcome expectations as mediator and subjective norms as moderator. *International Journal of Entrepreneurial Behaviour & Research*, *26*(3), 400–415. doi:10.1108/IJEBR-07-2019-0436

Sarooghi, H., Libaers, D., & Burkemper, A. (2015). Examining the relationship between creativity and innovation: A meta-analysis of organizational, cultural, and environmental factors. *Journal of Business Venturing*, *30*(5), 714–731. doi:10.1016/j.jbusvent.2014.12.003

Sawyer, K. (2009). The Collaborative Nature of Innovation. *Washington University Journal of Law and Policy*, *30*(1), 293–324. https://core.ac.uk/download/pdf/233186699.pdf

Sawyer, R. (2011). *Structure and Improvisation in Creative Teaching*. Cambridge University Press. doi:10.1017/CBO9780511997105

Sawyer, R. (2012a). *Explaining Creativity: The Science of Human Innovation*. Oxford University Press.

Sayún, M. (2020). *Decoding Smart Kalasatama: Design Research to Evaluate the Social Impact of a Smart City*. Academic Press.

Schieffer, A. (2006). Co-creative leadership: An integrated approach towards transformational leadership. *Transition Studies Review*, *13*(3), 607–623. doi:10.100711300-006-0129-5

Schön, D. A. (2017). *The reflective practitioner: How professionals think in action*. Routledge. doi:10.4324/9781315237473

Schuelke-Leech, B. A. (2018). A model for understanding the orders of magnitude of disruptive technologies. *Technological Forecasting and Social Change*, *129*, 261–274. doi:10.1016/j.techfore.2017.09.033

Schumpeter, J. A. (1942). *Capitalism, socialism and democracy*. Routledge.

Schutel, S., Raufflet, E., & Jacobi, P. R. (2017). Sustainability in management education: An alternative paradigm based on critical pedagogy and substantive rationality. In *Handbook of Sustainability in Management Education*. Edward Elgar Publishing. doi:10.4337/9781785361241.00013

Schwartz, J., Hatfield, S., Jones, R., & Anderson, S., (2019b). What is the future of work? *Redefining work, workforces, and workplaces. Part of A Deloitte Series on the Future of Work*.

Schwartz, J., Hagel, J., Wooll, M., & Monahan, K. (2019a). Reframing the Future of Work. *MIT Sloan Management Review*, *60*(3), 1–6.

SDG4EDUCATION2030. (2021, March 15). *Sustainable Development Goal 4*. Retrieved from Sdg4edcuation2030: http//:www.sdg4education2030.org

Seechaliao, T. (2017). Instructional strategies to support creativity and innovation in education. *Journal of Education and Learning*, 201-208.

Serdyukov, P. (2017). Innovation in Education: What works, What doesn't and What to do about it? *Journal of Research in Innovative Teaching and Learning*, 4-33.

Shane, S. A. (2003). *A general theory of entrepreneurship: The individual-opportunity nexus*. Edward Elgar Publishing. doi:10.4337/9781781007990

Shepherd, D. A., & Patzelt, H. (2011). The new field of sustainable entrepreneurship: Studying entrepreneurial action linking "what is to be sustained" with "what is to be developed". *Entrepreneurship Theory and Practice*, *35*(1), 137–163. doi:10.1111/j.1540-6520.2010.00426.x

Shepherd, D. A., & Williams, T. (2020). Entrepreneurship responding to adversity: Equilibrating Adverse Events and Disequilibrating Persistent Adversity. *Organization Theory*, *1*(4), 2631787720967678. doi:10.1177/2631787720967678

Shim, M., & Yang, H. S. (2018). Interindustry wage differentials, technology adoption, and job polarization. *Journal of Economic Behavior & Organization*, *146*, 141–160. doi:10.1016/j.jebo.2017.11.014

Sibbald, R. (2020). *Exploring the current digital shift in SA's insurance industry.* Retrieved March 07, 2021, from https://www.striata.com/resources/reading-room/the-current-digital-shift-in-insurance/

Simmers, C. A., & Soderstrom, S. (2017). A review of the pedagogical tools, games, and simulations in the sustainability classroom. Handbook of Sustainability in Management Education.

Simon, S. (2002). *Participatory online environmental education at the Open University UK*. Academic Press.

Širec, K., & Vrečko, I. (2020, June). Synthesis of youth entrepreneurship and project management competencies for post COVID-19 challenges. In *Proceedings of FEB Zagreb International Odyssey Conference on Economics and Business* (*Vol. 2*, No. 1, pp. 684-695). University of Zagreb, Faculty of Economics and Business.

Sisk, D. A. (2001). Creative leadership: A study of middle managers, senior level managers and CEOs. *Gifted Education International*, *15*(3), 281–290. doi:10.1177/026142940101500306

Slawsby, A., Alex, D., & Rivera, C. (2007). *Collective innovation* [Thesis]. Massachusetts Institute of Technology. https://dspace.mit.edu/handle/1721.1/39518

Stankov, U., Filimonau, V., & Vujičić, M. D. (2020). A mindful shift: An opportunity for mindfulness-driven tourism in a post-pandemic world. *Tourism Geographies*, *22*(3), 703–712. doi:10.1080/14616688.2020.1768432

Starko, A. J. (2018). *Creativity in the classroom: Schools of curious delight* (6th ed.). Routledge.

Sternberg, R., & O'Hara, L. (1999). Creativity and Intelligence. Handbook of Creativity, 251-272.

Sternberg, R. (2006). The Nature of Creativity. *Creativity Research Journal*, 87–98.

Sternberg, R. J., & Lubart, T. I. (1991). Creating creative minds. *Phi Delta Kappan*, *72*(8), 608–614.

Stevenson, H. H. (2000). Why entrepreneurship has won. *Coleman White Paper, 2*(4), 483.

St-Jean, E., Radu Lefebvre, M., & Mathieu, C. (2017). Can Less be More? Mentoring Functions, Learning Goal Orientation, and Novice Entrepreneurs' Self-Efficacy. *International Journal of Entrepreneurial Behaviour & Research*, *24*(1), 2–21. doi:10.1108/IJEBR-09-2016-0299

Stoll, L., & Temperley, J. (2009). Creative leadership: A challenge of our times. *School Leadership & Management*, *29*(1), 65–78. doi:10.1080/13632430802646404

Talan, G., & Sharma, G. D. (2019). Doing well by doing good: A systematic review and research agenda for sustainable investment. *Sustainability*, *11*(2), 353. doi:10.3390u11020353

Tam, G., & El-Azar, D. (2020). *3 ways the coronavirus pandemic could reshape education*. World Economic Forum. https://www.weforum.org/agenda/2020/03/3-ways-coronavirus-is-reshaping-education-and-what-changes-might-be-here-to-stay

TeachThought. (n.d.). *8 Types Of Imagination.* https://www.teachthought.com/learning/8-types-of-imagination/

The World Bank. (2020a). *Remote Learning and COVID-19: The use of educational technologies at scale across an education system as a result of massive school closings in response to the COVID-19 pandemic to enable distance education and online learning*. Retrieved March 24, 2021, from https://documents.worldbank.org/curated/en/266811584657843186/pdf/Rapid-Response-Briefing-Note-Remote-Learning-and-COVID-19-Outbreak.pdf

The World Bank. (2020b). *Guidance Note: Remote Learning & COVID-19.* Retrieved March 27, 2021, from https://documents.worldbank.org/curated/en/531681585957264427/pdf/Guidance-Note-on-Remote-Learning-and-COVID-19.pdf

Thomas, A., & Thorne, G. (2017). *How to increase higher level thinking*. Center for Literacy & Learning. https://www.cdl.org/how-to-increase-high-order-thinking/

Thomas, N., Randolph, A., & Marin, A. (2019). A network view of entrepreneurial cognition in corporate entrepreneurship contexts: A socially situated approach. *Management Decision*, *58*(7), 1331–1354. doi:10.1108/MD-11-2017-1195

Thomson, J. (2015, July 9). *Poor Grades*. Retrieved from Inside Higher Education: http://www.insidehighered/news/2015/06/09

Tidd, J., & Bessant, J. (2014). *Strategic Innovation Management*. Wiley.

Tidwell, J. (2002). *UI Patterns and Techniques*. Academic Press.

Tong, S. (2021). Dialectics as immanent critique. Or, dialectics as both ontology and epistemology with a practical intention. *Filozofija i Društvo*, *32*(1), 29–39. doi:10.2298/FID2101029S

Toraman, Ç., Özdemir, H. F., Aytuğ Koşan, A. M., & Orakcı, Ş. (2020). Relationships between cognitive flexibility, perceived quality of faculty life, learning approaches, and academic achievement. *International Journal of Instruction*, *13*(1), 85–100. doi:10.29333/iji.2020.1316a

Tovey, M. (2008). *Collective Intelligence: Creating a Prosperous World at Peace*. Earth Intelligence Network.

Tower, C., & McGuinness, E. (2011). *A Friend Indeed: Evaluation of an Insurance Education Radio Campaign in Kenya*. Microfinance Opportunities Publications.

Trott, P. (2008). *Innovation management and new product development* (4th ed.). Prentice Hall.

UNESCO. (2013). *ICT Education.* Retrieved from UNESCO: http//:www.unescobkk.org/education/ICT

UNESCO. (2014). UNESCO Roadmap for Implementing the Global Action Programme on Education for Sustainable Development. *NCVER's International Tertiary Education Research Database*.

Unger, M., & Marsan, G., Meissner, Polt, W., & Cervantes, M. (2018). Knew Challenges for Universities in the Knowledge Triangle. *The Journal of Technology Transfer*, 806–819.

United Nations Conference on Environment and Development. (1992). *Agenda 21—Earth Summit*. Author.

United Nations Educational, Scientific and Cultural Organization. (2020). *COVID-19 Educational disruption and response*. Retrieved March 07, 2021, from https://en.unesco.org/covid19/educationresponse

United Nations. (2000). The Millennium Development Goals. New York: United Nations.

United Nations. (2015). *Sustainable development goals: Promote inclusive and sustainable economic growth, employment, and decent work for all*. Retrieved 3 December 2019 from https://www.un.org/sustainabledevelopment/economic-growth/

United Nations. (2015). *Transforming our World: The 2030 Agenda for Sustainable Development. Sustainable Development Knowledge Platform*. https://sustainabledevelopment.un.org/post2015/transformingourworld/publication

United Nations. (2021). *SDG Indicators—SDG Indicators*. Sustainable Development Goals. https://unstats.un.org/sdgs/indicators/indicators-list/

Urbaniec, M. (2018). Sustainable Entrepreneurship: Innovation-Related Activities in European Enterprises. *Polish Journal of Environmental Studies*, *27*(4), 1773–1779. Advance online publication. doi:10.15244/pjoes/78155

van Wyk, J. (2018). Cognitive computing governance and risk management. *Southern African Journal of Accountability and Auditing Research*, *20*(1), 71–88. https://journals.co.za/content/journal/10520/EJC-11fd67a2a5

Varga von Kibéd, M. (2000). *Unterschiede und tiefere Gemeinsamkeiten der Aufstellungsarbeit mit Organisationen und der systemischen Familienaufstellungen. In Praxis Der Organisationsaufstellungen. Grundlagen, Prinzipien, Arbeitsbereiche*. Carl-Auer-Systeme.

Vaughan, P. (2012). Acting on Sustainability. *Research in Science Education*, 149–154.

Vidal, A., & da Silva Martins, G. (2017). The importance of philosophical and anthropological knowledge in management education regarding sustainability. In *Handbook of Sustainability in Management Education*. Edward Elgar Publishing. doi:10.4337/9781785361241.00015

Vieluf, S., Kaplan, D., Klieme, E., & Bayer, S. (2012). *Teaching practices and Pedagogical Innovation: Evidence from TALIS*. OECD Publishing. Retrieved from https://www.oecd.org/edu/school doi:10.1787/9789264123540-en

VISPA - Das nächste Level der virtuellen Kollaboration. (2021). *Step up Your Workshop Game with Vispa*. https://vispa.io/de/

Vygotsky, L. (2004). Imagination and Creativity in Childhood. *Journal of Russian & East European Psychology*, *42*(1), 7–97. doi:10.1080/10610405.2004.11059210

Walls, H. L. (2018). Wicked problems and a 'wicked' solution. *Globalization and Health*, *14*(1), 34. Advance online publication. doi:10.118612992-018-0353-x PMID:29653547

Wang, K. (2013). Collective innovation: A literature review. *2013 Proceedings of PICMET '13: Technology Management in the IT-Driven Services (PICMET)*, 608–615.

Wang, X., Dass, M., Arnett, D. B., & Yu, X. (2020). Understanding firms' relative strategic emphases: An entrepreneurial orientation explanation. *Industrial Marketing Management*, *84*, 151–164. doi:10.1016/j.indmarman.2019.06.009

Ward, D. (2010). Manual for participatory radio campaigns: Revised manual for the programming stages of AFRRI participatory radio campaign number two. African Farm Radio Research Initiative (AFRRI), Farm Radio International.

Watson, J. (2020). *Learning through television in low-income contexts: Mitigating the impact of coronavirus (COVID-19).* The EdTech Hub. Retrieved March 07, 2021, from https://edtechhub.org/2020/03/31/learning-through-television-in-low-income-contexts-mitigating-the-impact-of-covid-19/

Whitney, P., & Nogueira, A. (2020). Cutting Cubes Out of Fog: The Whole View of Design. Tongji University and Tongji University Press.

Wildavsky, B., Kelly, A., & Carey, K. (2012). *Reinventing Higher Education: The Promise of Innovation*. Harvard Education Press.

Wilkie, K. (2004). Becoming facilitative: Shifts in lecturers' approaches to facilitating problem-based learning. *Challenging Research in Problem-Based Learning*, 81–92.

Wingard, J. (2020). *Why Companies Need Creative Leaders In The Future Of Work*. Forbes. https://www.forbes.com/sites/jasonwingard/2020/05/29/why-companies-need-creative-leaders-in-the-future-of-work/?sh=7d1736d3482a

Wong, L. T. (2017). Mission possible: Introducing sustainability as an experiential entrepreneurship activity. In *Handbook of sustainability in management education*. Edward Elgar Publishing. doi:10.4337/9781785361241.00017

Woolley, A. W., Aggarwal, I., & Malone, T. W. (2015). Collective Intelligence and Group Performance. *Current Directions in Psychological Science*, *24*(6), 420–424. doi:10.1177/0963721415599543

World Bank. (2020). *COVID-19 (coronavirus) drives Sub-Saharan Africa toward first recession in 25 years.* Retrieved March 19, 2021, from https://www.worldbank.org/en/news/press-release/2020/04/09/covid-19-coronavirus-drives-sub-saharan-africa-toward-first-recession-in-25-years

World Creativity and Innovation Week. (2021). *Home and about us*. Retrieved Feb 6, 2021, www.wciw.org

World Health Organization. (2020). *Coronavirus disease (COVID-19) Pandemic.* World Health Organization. Retrieved May 03, 2021, from https://www.who.int/emergencies/diseases/novel-coronavirus-2019

Worldometers. (2020). *Coronavirus cases.* Retrieved September 18, 2020, from https://www.worldometers.info/coronavirus/country/south-africa/

Xiao, J. (2018). On the margins or at the center? Distance education in higher education. *Distance Education*, *39*(2), 259–274. doi:10.1080/01587919.2018.1429213

Yorks, L., Rotatori, D., Sung, S., & Justice, S. (2020). Workplace reflection in the Age of AI: Materiality, technology, and machines. *Advances in Developing Human Resources*, *22*(3), 308–319. doi:10.1177/1523422320927299

Zan, A., Yao, Y., & Chen, H. (2019). *University-Industry Collaborative Innovation Evolutionary Game and Simulation Research: The Agent Coupling and Group Size View*. IEEE.

Related References

To continue our tradition of advancing information science and technology research, we have compiled a list of recommended IGI Global readings. These references will provide additional information and guidance to further enrich your knowledge and assist you with your own research and future publications.

Abdel-Hameid, S. O., & Wilson, E. (2018). Gender, Organization, and Change in Sudan. In N. Mahtab, T. Haque, I. Khan, M. Islam, & I. Wahid (Eds.), *Handbook of Research on Women's Issues and Rights in the Developing World* (pp. 107–120). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-3018-3.ch007

Abdulazeez, N. J. (2016). Reconciliation of Identity Groups in Iraq: Conflict Analysis and Political Means of Ethnic Accommodation. In F. Cante & H. Quehl (Eds.), *Handbook of Research on Transitional Justice and Peace Building in Turbulent Regions* (pp. 278–297). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9675-4.ch014

Abdullahi, R. B. (2018). Volunteerism in Urban Development the Case of Non-Cash, Non-Digital Crowdfunding Growth in Nigeria. In U. Benna & A. Benna (Eds.), *Crowdfunding and Sustainable Urban Development in Emerging Economies* (pp. 188–210). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-3952-0.ch010

Abioye, T. O., Oyesomi, K., Ajiboye, E., Omidiora, S., & Oyero, O. (2017). Education, Gender, and Child-Rights: Salient Issues in SDGS Years in ADO-ODO/OTA Local Government Area of Ogun State, Nigeria. In O. Nelson, B. Ojebuyi, & A. Salawu (Eds.), *Impacts of the Media on African Socio-Economic Development* (pp. 141–154). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-1859-4.ch009

Acuña, Y. G. (2016). From the Studies of Violences to Memories: The Construction of Victims and its Articulations with the State. In F. Cante & H. Quehl (Eds.), *Handbook of Research on Transitional Justice and Peace Building in Turbulent Regions* (pp. 332–355). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9675-4.ch017

Adhikary, M., & Khatun, M. (2016). Issues of Convergence: Some Evidences of SAARC Countries. In R. Das (Ed.), *Handbook of Research on Global Indicators of Economic and Political Convergence* (pp. 119–143). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0215-9.ch006

Adisa, W. B. (2018). Land Use Policy and Urban Sprawl in Nigeria: Land Use and the Emergence of Urban Sprawl. In A. Eneanya (Ed.), *Handbook of Research on Environmental Policies for Emergency Management and Public Safety* (pp. 256–274). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-3194-4.ch014

Afolabi, O. S., Amao-Kolawole, T. G., Shittu, A. K., & Oguntokun, O. O. (2018). Rule of Law, Governance, and Sustainable Development: The Nigerian Perspective. In K. Teshager Alemu & M. Abebe Alebachew (Eds.), *Handbook of Research on Sustainable Development and Governance Strategies for Economic Growth in Africa* (pp. 273–290). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-3247-7.ch015

Agyei-Mensah, B. K. (2016). Impact of Adopting IFRS in Ghana: Empirical Evidence. In E. Uchenna, M. Nnadi, S. Tanna, & F. Iyoha (Eds.), *Economics and Political Implications of International Financial Reporting Standards* (pp. 191–230). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9876-5.ch010

Agyemang, O. S. (2018). Institutional Structures and the Prevalence of Foreign Ownership of Firms: Empirical Evidence From Africa. In K. Teshager Alemu & M. Abebe Alebachew (Eds.), *Handbook of Research on Sustainable Development and Governance Strategies for Economic Growth in Africa* (pp. 455–479). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-3247-7.ch024

Aham-Anyanwu, N. M., & Li, H. (2017). E-State: Realistic or Utopian? *International Journal of Public Administration in the Digital Age*, *4*(2), 56–76. doi:10.4018/IJPADA.2017040105

Ahmad, M. B., Pride, C., & Corsy, A. K. (2016). Free Speech, Press Freedom, and Democracy in Ghana: A Conceptual and Historical Overview. In L. Mukhongo & J. Macharia (Eds.), *Political Influence of the Media in Developing Countries* (pp. 59–73). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9613-6.ch005

Al-Jamal, M., & Abu-Shanab, E. (2018). Open Government: The Line between Privacy and Transparency. *International Journal of Public Administration in the Digital Age*, *5*(2), 64–75. doi:10.4018/IJPADA.2018040106

Alsaç, U. (2017). EKAP: Turkey's Centralized E-Procurement System. In R. Shakya (Ed.), *Digital Governance and E-Government Principles Applied to Public Procurement* (pp. 126–150). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-2203-4.ch006

Amadi, L. A., & Igwe, P. (2018). Open Government and Bureaucratic Secrecy in the Developing Democracies: Africa in Perspective. In A. Kok (Ed.), *Proliferation of Open Government Initiatives and Systems* (pp. 1–28). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-4987-1.ch001

Anthopoulos, L., Janssen, M., & Weerakkody, V. (2016). A Unified Smart City Model (USCM) for Smart City Conceptualization and Benchmarking. *International Journal of Electronic Government Research*, *12*(2), 77–93. doi:10.4018/IJEGR.2016040105

Ayeni, A. O. (2018). Environmental Policies for Emergency Management and Public Safety: Implementing Green Policy and Community Participation. In A. Eneanya (Ed.), *Handbook of Research on Environmental Policies for Emergency Management and Public Safety* (pp. 40–59). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-3194-4.ch003

Ayodele, J. O. (2017). The Influence of Migration and Crime on Development in Lagos, Nigeria. In G. Afolayan & A. Akinwale (Eds.), *Global Perspectives on Development Administration and Cultural Change* (pp. 192–230). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0629-4.ch009

Baarda, R. (2017). Digital Democracy in Authoritarian Russia: Opportunity for Participation, or Site of Kremlin Control? In R. Luppicini & R. Baarda (Eds.), *Digital Media Integration for Participatory Democracy* (pp. 87–100). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-2463-2.ch005

Bagwell, T. C., & Jackson, S. L. (2016). The Mode of Information – Due Process of Law and Student Loans: Bills of Attainder Enter the Digital Age. In R. Cropf & T. Bagwell (Eds.), *Ethical Issues and Citizen Rights in the Era of Digital Government Surveillance* (pp. 16–34). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9905-2.ch002

Balakrishnan, K. (2017). The Rationale for Offsets in Defence Acquisition from a Theoretical Perspective. In K. Burgess & P. Antill (Eds.), *Emerging Strategies in Defense Acquisitions and Military Procurement* (pp. 263–276). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0599-0.ch015

Banerjee, S. (2017). Globalization and Human Rights: How Globalization Can Be a Tool to Protect the Human Rights. In C. Akrivopoulou (Ed.), *Defending Human Rights and Democracy in the Era of Globalization* (pp. 1–16). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0723-9.ch001

Batırel, Ö. F. (2016). The Distributional Effects of Tax Policy: Tax Expenditures in Turkey. In M. Erdoğdu & B. Christiansen (Eds.), *Handbook of Research on Public Finance in Europe and the MENA Region* (pp. 391–428). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0053-7.ch018

Batrancea, L., Nichita, A., Batrancea, I., & Kirchler, E. (2016). Tax Compliance Behavior: An Upshot of Trust in and Power of Authorities across Europe and MENA. In M. Erdoğdu & B. Christiansen (Eds.), *Handbook of Research on Public Finance in Europe and the MENA Region* (pp. 248–267). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0053-7.ch012

Bessant, J. (2017). Digital Humour, Gag Laws, and the Liberal Security State. In R. Luppicini & R. Baarda (Eds.), *Digital Media Integration for Participatory Democracy* (pp. 204–221). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-2463-2.ch010

Boachie, C. (2016). The Effect of International Financial Reporting Standards Adoption on Foreign Direct Investment and the Economy. In E. Uchenna, M. Nnadi, S. Tanna, & F. Iyoha (Eds.), *Economics and Political Implications of International Financial Reporting Standards* (pp. 342–361). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9876-5.ch017

Boachie, C. (2017). Public Financial Management and Systems of Accountability in Sub-National Governance in Developing Economies. In E. Schoburgh & R. Ryan (Eds.), *Handbook of Research on Sub-National Governance and Development* (pp. 193–217). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-1645-3.ch009

Boachie, C., & Adu-Darko, E. (2018). Socio-Economic Impact of Foreign Direct Investment in Developing Countries. In V. Malepati & C. Gowri (Eds.), *Foreign Direct Investments (FDIs) and Opportunities for Developing Economies in the World Market* (pp. 66–81). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-3026-8.ch004

Bolgherini, S., & Lippi, A. (2016). Italy: Remapping Local Government from Re-Allocation and Re-Shaping to Re-Scaling. In U. Sadioglu & K. Dede (Eds.), *Theoretical Foundations and Discussions on the Reformation Process in Local Governments* (pp. 265–287). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0317-0.ch011

Borràs, S. (2017). Rights of Nature to Protect Human Rights in Times of Environmental Crisis. In C. Akrivopoulou (Ed.), *Defending Human Rights and Democracy in the Era of Globalization* (pp. 225–261). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0723-9.ch010

Brusca, I., Olmo, J., & Labrador, M. (2018). Characterizing the Risk Factors for Financial Sustainability in Spanish Local Governments. In M. Rodríguez Bolívar & M. López Subires (Eds.), *Financial Sustainability and Intergenerational Equity in Local Governments* (pp. 206–223). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-3713-7.ch009

Caccioppoli, L. (2016). Bridging the Gaps with Nonprofits: The Intersection of Institutions, Interests, and the Health Policy Process. In R. Gholipour & K. Rouzbehani (Eds.), *Social, Economic, and Political Perspectives on Public Health Policy-Making* (pp. 233–256). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9944-1.ch011

Callanan, M. (2016). Institutionalizing the Politics-Administration Dichotomy in Local Government: Reforming the Council-Manager System in Ireland. In U. Sadioglu & K. Dede (Eds.), *Theoretical Foundations and Discussions on the Reformation Process in Local Governments* (pp. 153–178). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0317-0.ch007

Campbell, A. (2016). "Imperialism" and "Federalism": The Ambiguity of State and City in Russia. In U. Sadioglu & K. Dede (Eds.), *Theoretical Foundations and Discussions on the Reformation Process in Local Governments* (pp. 353–372). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0317-0.ch015

Carini, C., & Teodori, C. (2016). Potential Uses and Usefulness of Italian Local Government Consolidated Financial Reporting: The Case of the Town Council of Brescia. In A. Ferreira, G. Azevedo, J. Oliveira, & R. Marques (Eds.), *Global Perspectives on Risk Management and Accounting in the Public Sector* (pp. 68–89). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9803-1.ch004

Carter, S. D. (2016). Increased Workforce Diversity by Race, Gender, and Age and Equal Employment Opportunity Laws: Implications for Human Resource Development. In J. Prescott (Ed.), *Handbook of Research on Race, Gender, and the Fight for Equality* (pp. 398–423). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0047-6.ch018

Cebeci, K., & Zülfüoğlu, Ö. (2016). Financial Market Regulations in a Globalized World: Some Remarks for the MENA Region. In M. Erdoğdu & B. Christiansen (Eds.), *Comparative Political and Economic Perspectives on the MENA Region* (pp. 180–198). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9601-3.ch008

Chen, M., & Su, F. (2017). Global Civic Engagement as an Empowering Device for Cross-Ethnic and Cross-Cultural Understanding in Taiwan. In R. Shin (Ed.), *Convergence of Contemporary Art, Visual Culture, and Global Civic Engagement* (pp. 24–45). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-1665-1.ch002

Cheng, J. Y. (2016). Local Governments in China. In U. Sadioglu & K. Dede (Eds.), *Comparative Studies and Regionally-Focused Cases Examining Local Governments* (pp. 207–227). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0320-0.ch010

Cheong, D. D. (2016). Countering Online Violent Extremism: State Action as Strategic Communication. In M. Khader, L. Neo, G. Ong, E. Mingyi, & J. Chin (Eds.), *Combating Violent Extremism and Radicalization in the Digital Era* (pp. 283–306). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0156-5.ch014

Chigwata, T. C. (2017). Fiscal Decentralization: Constraints to Revenue-Raising by Local Government in Zimbabwe. In E. Schoburgh & R. Ryan (Eds.), *Handbook of Research on Sub-National Governance and Development* (pp. 218–240). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-1645-3.ch010

Chowdhury, M. A. (2017). The Nexus Between Institutional Quality and Foreign Direct Investments (FDI) in South Asia: Dynamic Heterogeneous Panel Approach. In T. Dorożyński & A. Kuna-Marszałek (Eds.), *Outward Foreign Direct Investment (FDI) in Emerging Market Economies* (pp. 293–310). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-2345-1.ch015

Christopher, M. E., & Tsushima, V. G. (2017). Police Interactions with Persons-in-Crisis: Emergency Psychological Services and Jail Diversion. In C. Mitchell & E. Dorian (Eds.), *Police Psychology and Its Growing Impact on Modern Law Enforcement* (pp. 274–294). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0813-7.ch014

Citro, F., Lucianelli, G., & Santis, S. (2018). Financial Conditions, Financial Sustainability, and Intergenerational Equity in Local Governments: A Literature Review. In M. Rodríguez Bolívar & M. López Subires (Eds.), *Financial Sustainability and Intergenerational Equity in Local Governments* (pp. 101–124). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-3713-7.ch005

Covell, C. E. (2018). Theoretical Application of Public Sector Planning and Budgeting. In M. Rodríguez Bolívar & M. López Subires (Eds.), *Financial Sustainability and Intergenerational Equity in Local Governments* (pp. 248–279). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-3713-7.ch011

Cuadrado-Ballesteros, B., García-Sánchez, I. M., & Martínez-Ferrero, J. (2016). Commercialization of Local Public Services. In A. Ferreira, G. Azevedo, J. Oliveira, & R. Marques (Eds.), *Global Perspectives on Risk Management and Accounting in the Public Sector* (pp. 132–150). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9803-1.ch007

Cunha, A., Ferreira, A. D., & Fernandes, M. J. (2016). The Influence of Accounting Information in the Re-Election of the Mayors in Portugal. In A. Ferreira, G. Azevedo, J. Oliveira, & R. Marques (Eds.), *Global Perspectives on Risk Management and Accounting in the Public Sector* (pp. 108–131). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9803-1.ch006

Cunha, A. M., Ferreira, A. D., & Fernandes, M. J. (2018). The Impact of Accounting Information and Socioeconomic Factors in the Re-Election of Portuguese Mayors. In G. Azevedo, J. da Silva Oliveira, R. Marques, & A. Ferreira (Eds.), *Handbook of Research on Modernization and Accountability in Public Sector Management* (pp. 406–432). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-3731-1.ch019

da Rosa, I., & de Almeida, J. (2017). Digital Transformation in the Public Sector: Electronic Procurement in Portugal. In R. Shakya (Ed.), *Digital Governance and E-Government Principles Applied to Public Procurement* (pp. 99–125). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-2203-4.ch005

Daramola, O. (2018). Revisiting the Legal Framework of Urban Planning in the Global South: An Explanatory Example of Nigeria. In K. Teshager Alemu & M. Abebe Alebachew (Eds.), *Handbook of Research on Sustainable Development and Governance Strategies for Economic Growth in Africa* (pp. 258–271). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-3247-7.ch014

Dau, L. A., Moore, E. M., Soto, M. A., & LeBlanc, C. R. (2017). How Globalization Sparked Entrepreneurship in the Developing World: The Impact of Formal Economic and Political Linkages. In B. Christiansen & F. Kasarcı (Eds.), *Corporate Espionage, Geopolitics, and Diplomacy Issues in International Business* (pp. 72–91). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-1031-4.ch005

Dean, G. (2016). Framing the Challenges of Online Violent Extremism: "Policing-Public-Policies-Politics" Framework. In M. Khader, L. Neo, G. Ong, E. Mingyi, & J. Chin (Eds.), *Combating Violent Extremism and Radicalization in the Digital Era* (pp. 226–259). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0156-5.ch012

Drenner, K. (2017). Introduction to Faith in State Legislatures: Land of the Brave and the Home of the Free – The Star-Spangled Banner. In *Impacts of Faith-Based Decision Making on the Individual-Level Legislative Process: Emerging Research and Opportunities* (pp. 1–25). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-2388-8.ch001

Drenner, K. (2017). The Holy Wars of Marriage. In *Impacts of Faith-Based Decision Making on the Individual-Level Legislative Process: Emerging Research and Opportunities* (pp. 92–116). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-2388-8.ch004

Drenner, K. (2017). The Implications of Religious Liberty. In *Impacts of Faith-Based Decision Making on the Individual-Level Legislative Process: Emerging Research and Opportunities* (pp. 143–162). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-2388-8.ch006

Edwards, S. B. III. (2016). The Right to Privacy Is Dying: Technology Is Killing It and We Are Letting It Happen. In R. Cropf & T. Bagwell (Eds.), *Ethical Issues and Citizen Rights in the Era of Digital Government Surveillance* (pp. 103–126). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9905-2.ch006

Elena, S., & van Schalkwyk, F. (2017). Open Data for Open Justice in Seven Latin American Countries. In C. Jiménez-Gómez & M. Gascó-Hernández (Eds.), *Achieving Open Justice through Citizen Participation and Transparency* (pp. 210–231). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0717-8.ch011

Eneanya, A. N. (2016). Health Policy Implementation and Its Barriers: The Case Study of US Health System. In R. Gholipour & K. Rouzbehani (Eds.), *Social, Economic, and Political Perspectives on Public Health Policy-Making* (pp. 42–63). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9944-1.ch003

Eneanya, A. N. (2018). Integrating Ecosystem Management and Environmental Media for Public Policy on Public Health and Safety. In A. Eneanya (Ed.), *Handbook of Research on Environmental Policies for Emergency Management and Public Safety* (pp. 321–338). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-3194-4.ch017

Erdoğdu, M. M., Yılmaz, B. E., Aydın, M., & User, İ. (2016). Political Economy of Tax Evasion and Tax Loss in the Real Estate Sector: A Property Tax Reform Proposal for Turkey. In M. Erdoğdu & B. Christiansen (Eds.), *Handbook of Research on Public Finance in Europe and the MENA Region* (pp. 268–298). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0053-7.ch013

Essien, E. D. (2018). Strengthening Performance of Civil Society Through Dialogue and Critical Thinking in Nigeria: Its Ethical Implications. In S. Chhabra (Ed.), *Handbook of Research on Civic Engagement and Social Change in Contemporary Society* (pp. 82–102). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-4197-4.ch005

Fanaian, T. (2017). The Theocratic Deception Trap: Khomeini's Persuasion Techniques and Communication Patterns in His Books, Guardianship of the Jurist 1979 and Testament 1989. In E. Lewin, E. Bick, & D. Naor (Eds.), *Comparative Perspectives on Civil Religion, Nationalism, and Political Influence* (pp. 62–105). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0516-7.ch003

Farrag, N. A., & Ezzat, A. M. (2016). The Impact of Corruption on Economic Growth: A Comparative Analysis between Europe and MENA Countries. In M. Erdoğdu & B. Christiansen (Eds.), *Handbook of Research on Comparative Economic Development Perspectives on Europe and the MENA Region* (pp. 74–97). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9548-1.ch005

Farzanegan, M. R. (2016). Demographic Transition, Oil, and Institutions: Lessons from the Global Experience for Iran. In M. Erdoğdu & B. Christiansen (Eds.), *Comparative Political and Economic Perspectives on the MENA Region* (pp. 261–291). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9601-3.ch012

Feickert, H. (2016). Enforcing Central Authority: Nuri al-Maliki and the Tradition of Iraq's Authoritarian State. In F. Cante & H. Quehl (Eds.), *Handbook of Research on Transitional Justice and Peace Building in Turbulent Regions* (pp. 233–252). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9675-4.ch012

Fidanoski, F., Sergi, B. S., Simeonovski, K., Naumovski, V., & Sazdovski, I. (2018). Effects of Foreign Capital Entry on the Macedonian Banking Industry: Two-Edged Sword. In B. Sergi, F. Fidanoski, M. Ziolo, & V. Naumovski (Eds.), *Regaining Global Stability After the Financial Crisis* (pp. 308–338). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-4026-7.ch015

Fiske, R. R. (2016). The Borders of Corruption: Living in the State of Exception. In R. Cropf & T. Bagwell (Eds.), *Ethical Issues and Citizen Rights in the Era of Digital Government Surveillance* (pp. 1–15). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9905-2.ch001

Franconi, A. I. (2018). Economic Variations and Their Impact on Labor Legislation Throughout History in Argentina. In S. Amine (Ed.), *Employment Protection Legislation in Emerging Economies* (pp. 77–98). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-4134-9.ch004

Franzke, J. (2016). Structure of the Local Tiers in Germany: Trends and Challenges in Local Governance and Autonomy. In U. Sadioglu & K. Dede (Eds.), *Comparative Studies and Regionally-Focused Cases Examining Local Governments* (pp. 51–70). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0320-0.ch003

Friedrich, P., & Chebotareva, M. (2017). Options for Applying Functional Overlapping Competing Jurisdictions (FOCJs) for Municipal Cooperation in Russia. In M. Lewandowski & B. Kożuch (Eds.), *Public Sector Entrepreneurship and the Integration of Innovative Business Models* (pp. 73–107). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-2215-7.ch004

Gałuszka, J. (2016). Decentralization and Sub-National Government in Poland: Territorial Governance, Competencies, Fiscal Autonomy of Local Governments. In U. Sadioglu & K. Dede (Eds.), *Comparative Studies and Regionally-Focused Cases Examining Local Governments* (pp. 91–112). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0320-0.ch005

Game, C. (2016). Decentralisation and Devolution in the United Kingdom. In U. Sadioglu & K. Dede (Eds.), *Comparative Studies and Regionally-Focused Cases Examining Local Governments* (pp. 1–34). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0320-0.ch001

García, M. J., & Sancino, A. (2016). Directly Elected Mayors vs. Council Appointed Mayors – Which Effects on Local Government Systems?: A Comparison between Italy and Spain. In U. Sadioglu & K. Dede (Eds.), *Theoretical Foundations and Discussions on the Reformation Process in Local Governments* (pp. 288–303). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0317-0.ch012

Garita, M. (2018). The Negotiation and Effects of Fiscal Privileges in Guatemala. In M. Garita & C. Bregni (Eds.), *Economic Growth in Latin America and the Impact of the Global Financial Crisis* (pp. 119–137). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-4981-9.ch008

Gascó-Hernández, M. (2017). Digitalizing Police Requirements: Opening up Justice through Collaborative Initiatives. In C. Jiménez-Gómez & M. Gascó-Hernández (Eds.), *Achieving Open Justice through Citizen Participation and Transparency* (pp. 157–172). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0717-8.ch008

Gáspár-Szilágyi, S. (2017). Human Rights Conditionality in the EU's Newly Concluded Association Agreements with the Eastern Partners. In C. Akrivopoulou (Ed.), *Defending Human Rights and Democracy in the Era of Globalization* (pp. 50–79). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0723-9.ch003

Gavrielides, T. (2017). Reconciling Restorative Justice with the Law for Violence Against Women in Europe: A Scheme of Structured and Unstructured Models. In D. Halder & K. Jaishankar (Eds.), *Therapeutic Jurisprudence and Overcoming Violence Against Women* (pp. 106–120). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-2472-4.ch007

Gechlik, M., Dai, D., & Beck, J. C. (2017). Open Judiciary in a Closed Society: A Paradox in China? In C. Jiménez-Gómez & M. Gascó-Hernández (Eds.), *Achieving Open Justice through Citizen Participation and Transparency* (pp. 56–92). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0717-8.ch004

Gerst, M., & Gao, X. (2016). IP and Electric Vehicles Standards: Local Policies vs. Global Standards? Standardization Management in a Multi-Stakeholder Environment in China. In K. Jakobs (Ed.), *Effective Standardization Management in Corporate Settings* (pp. 236–264). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9737-9.ch011

Gessler, H. A. (2016). Reformulating Government-Citizen Relations in a Digitally Connected World: The Twitter Ban Phenomenon in Turkey. In T. Deželan & I. Vobič (Eds.), *R)evolutionizing Political Communication through Social Media* (pp. 75–93). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9879-6.ch005

Gholipour, R. (2016). Policy Making: A New Method to Manage Public Issues. In R. Gholipour & K. Rouzbehani (Eds.), *Social, Economic, and Political Perspectives on Public Health Policy-Making* (pp. 1–19). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9944-1.ch001

Gillath, N. (2017). Avoiding Conscription in Israel: Were Women Pawns in the Political Game? In E. Lewin, E. Bick, & D. Naor (Eds.), *Comparative Perspectives on Civil Religion, Nationalism, and Political Influence* (pp. 226–256). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0516-7.ch009

Giousmpasoglou, C., Marinakou, E., & Paliktzoglou, V. (2016). Economic Crisis and Higher Education in Greece. In P. Ordóñez de Pablos & R. Tennyson (Eds.), *Impact of Economic Crisis on Education and the Next-Generation Workforce* (pp. 120–148). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9455-2.ch006

Gomes, P., Camões, S. M., & Carvalho, J. (2016). Determinants of the Design and Use of PMS in Portuguese Government Agencies: A Complementary Theoretical Approach. In A. Ferreira, G. Azevedo, J. Oliveira, & R. Marques (Eds.), *Global Perspectives on Risk Management and Accounting in the Public Sector* (pp. 320–345). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9803-1.ch016

Gonçalves, T. A., & Rosendo, D. (2016). New Communication Technologies: Women's Rights Violations, Limits on Freedom of Expression, and Alternative ways to Promote Human Rights. In J. Wilson & N. Gapsiso (Eds.), *Overcoming Gender Inequalities through Technology Integration* (pp. 144–162). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9773-7.ch007

Grant, B., Woods, R., & Tan, S. F. (2017). Subnational Finance in Australia and China: The Case for Municipal Bond Banks. In E. Schoburgh & R. Ryan (Eds.), *Handbook of Research on Sub-National Governance and Development* (pp. 150–166). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-1645-3.ch007

Grecco, M. C., & Geron, C. M. (2016). The Brazilian Case of IFRS Adoption: The Impacts and the New Perspectives. In E. Uchenna, M. Nnadi, S. Tanna, & F. Iyoha (Eds.), *Economics and Political Implications of International Financial Reporting Standards* (pp. 303–318). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9876-5.ch015

Gül, H., Kamalak, İ., & Kiriş, H. M. (2016). Local and Urban Administrations, Politics, and Elections in Turkey. In U. Sadioglu & K. Dede (Eds.), *Comparative Studies and Regionally-Focused Cases Examining Local Governments* (pp. 182–206). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0320-0.ch009

Guner, A., & Keles, R. (2016). A Comparative Study of Local Governments in the Constitutions of Selected EU Countries and Turkey. In U. Sadioglu & K. Dede (Eds.), *Comparative Studies and Regionally-Focused Cases Examining Local Governments* (pp. 349–363). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0320-0.ch016

Gür, B. (2016). Economic and Political Factors Affecting Foreign Direct Investment in the MENA Region. In M. Erdoğdu & B. Christiansen (Eds.), *Comparative Political and Economic Perspectives on the MENA Region* (pp. 221–245). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9601-3.ch010

Gurpinar, B. (2018). Supporter, Activist, Rebel, Terrorist: Children in Syria. In C. Akrivopoulou (Ed.), *Global Perspectives on Human Migration, Asylum, and Security* (pp. 97–114). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-2817-3.ch005

Gussen, B. F. (2018). The United States. In *Ranking Economic Performance and Efficiency in the Global Market: Emerging Research and Opportunities* (pp. 109–136). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-2756-5.ch005

Hadji-Janev, M. (2016). International Legal Aspects of Protecting Civilians and Their Property in the Future Cyber Conflict. In M. Hadji-Janev & M. Bogdanoski (Eds.), *Handbook of Research on Civil Society and National Security in the Era of Cyber Warfare* (pp. 423–449). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-8793-6.ch019

Hankel, G. (2016). Gacaca Courts in Rwanda: Experience and Perspectives. In F. Cante & H. Quehl (Eds.), *Handbook of Research on Transitional Justice and Peace Building in Turbulent Regions* (pp. 218–231). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9675-4.ch011

Haque, T. (2018). Women-Friendly Working Environment in Bangladesh: Critical Analysis. In N. Mahtab, T. Haque, I. Khan, M. Islam, & I. Wahid (Eds.), *Handbook of Research on Women's Issues and Rights in the Developing World* (pp. 52–68). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-3018-3.ch004

Hartzel, K. S., & Gerde, V. W. (2016). Using Duality Theory to Reframe E-Government Challenges. In R. Cropf & T. Bagwell (Eds.), *Ethical Issues and Citizen Rights in the Era of Digital Government Surveillance* (pp. 35–56). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9905-2.ch003

Heilmann, D. (2016). Post-Conflict Justice in Cambodia: The Legacy of the Khmer Rouge Tribunal. In F. Cante & H. Quehl (Eds.), *Handbook of Research on Transitional Justice and Peace Building in Turbulent Regions* (pp. 201–217). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9675-4.ch010

Heuva, W. E. (2017). Deferring Citizens' "Right to Know" in an Information Age: The Information Deficit in Namibia. In N. Mhiripiri & T. Chari (Eds.), *Media Law, Ethics, and Policy in the Digital Age* (pp. 245–267). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-2095-5.ch014

Idris, S. (2016). Challenge of Democracy and Local Governance in Pakistan. In U. Sadioglu & K. Dede (Eds.), *Comparative Studies and Regionally-Focused Cases Examining Local Governments* (pp. 259–279). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0320-0.ch012

Islam, M. R. (2018). Abuse Among Child Domestic Workers in Bangladesh. In I. Tshabangu (Ed.), *Global Ideologies Surrounding Children's Rights and Social Justice* (pp. 1–21). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-2578-3.ch001

Jankovic-Milic, V., & Džunić, M. (2017). Measuring Governance: The Application of Grey Relational Analysis on World Governance Indicators. In J. Stanković, P. Delias, S. Marinković, & S. Rochhia (Eds.), *Tools and Techniques for Economic Decision Analysis* (pp. 104–128). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0959-2.ch005

Jenne, C. (2016). Increase of Transportation Efficiencies and Emission Reduction within a City. In G. Hua (Ed.), *Smart Cities as a Solution for Reducing Urban Waste and Pollution* (pp. 91–125). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0302-6.ch004

Jiménez-Gómez, C. E. (2017). Open Judiciary Worldwide: Best Practices and Lessons Learnt. In C. Jiménez-Gómez & M. Gascó-Hernández (Eds.), *Achieving Open Justice through Citizen Participation and Transparency* (pp. 1–15). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0717-8.ch001

Kabullah, M. I., & Wahab, S. (2016). The Curbing of Corruption by Formal and Informal Accountability at the Indonesian Local Governments: Learning from Yogyakarta City. In U. Sadioglu & K. Dede (Eds.), *Theoretical Foundations and Discussions on the Reformation Process in Local Governments* (pp. 441–461). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0317-0.ch018

Karatzimas, S., & Miquela, C. G. (2018). Two Approaches on Local Governments' Financial Sustainability: Law vs. Practice in Catalan Municipalities. In M. Rodríguez Bolívar & M. López Subires (Eds.), *Financial Sustainability and Intergenerational Equity in Local Governments* (pp. 58–81). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-3713-7.ch003

Kerasidou, X., Buscher, M., Liegl, M., & Oliphant, R. (2016). Emergency Ethics, Law, Policy & IT Innovation in Crises. *International Journal of Information Systems for Crisis Response and Management*, *8*(1), 1–24. doi:10.4018/IJISCRAM.2016010101

Khanh, N. T., Danh, M. T., & Gim, G. (2016). E-Government in Vietnam: Situation, Prospects, Trends, and Challenges. In I. Sodhi (Ed.), *Trends, Prospects, and Challenges in Asian E-Governance* (pp. 256–280). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9536-8.ch013

Kiran, M. (2016). Legal Issues Surrounding Connected Government Services: A Closer Look at G-Clouds. In Z. Mahmood (Ed.), *Cloud Computing Technologies for Connected Government* (pp. 322–344). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-8629-8.ch013

Kita, Y. (2017). An Analysis of a Lay Adjudication System and Open Judiciary: The New Japanese Lay Adjudication System. In C. Jiménez-Gómez & M. Gascó-Hernández (Eds.), *Achieving Open Justice through Citizen Participation and Transparency* (pp. 93–109). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0717-8.ch005

Klimczuk, A., & Klimczuk-Kochańska, M. (2016). Changes in the Local Government System and Regional Policy in Poland: The Impact of Membership in the European Union. In U. Sadioglu & K. Dede (Eds.), *Theoretical Foundations and Discussions on the Reformation Process in Local Governments* (pp. 328–352). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0317-0.ch014

Klimovský, D. (2016). Experience with Managerial and Political Reform Measures at the Local Level in Slovakia: Intended and Unintended Outcomes. In U. Sadioglu & K. Dede (Eds.), *Comparative Studies and Regionally-Focused Cases Examining Local Governments* (pp. 135–160). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0320-0.ch007

Küçükali, U. F. (2016). Ecological Influences on the Evolving Planning System in Turkey. In U. Benna & S. Garba (Eds.), *Population Growth and Rapid Urbanization in the Developing World* (pp. 298–312). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0187-9.ch015

Kumari, S., Patil, Y., & Rao, P. (2017). An Approach to Sustainable Watershed Management: Case Studies on Enhancing Sustainability with Challenges of Water in Western Maharashtra. In P. Rao & Y. Patil (Eds.), *Reconsidering the Impact of Climate Change on Global Water Supply, Use, and Management* (pp. 252–271). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-1046-8.ch014

Kumburu, N. P., & Pande, V. S. (2018). Decentralization and Local Governance in Tanzania: Theories and Practice on Sustainable Development. In K. Teshager Alemu & M. Abebe Alebachew (Eds.), *Handbook of Research on Sustainable Development and Governance Strategies for Economic Growth in Africa* (pp. 131–148). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-3247-7.ch007

Kunock, A. I. (2017). Boko Haram Insurgency in Cameroon: Role of Mass Media in Conflict Management. In N. Mhiripiri & T. Chari (Eds.), *Media Law, Ethics, and Policy in the Digital Age* (pp. 226–244). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-2095-5.ch013

Laha, A. (2016). Association between Governance and Human Development in South Asia: A Cross Country Analysis. In R. Das (Ed.), *Handbook of Research on Global Indicators of Economic and Political Convergence* (pp. 254–273). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0215-9.ch012

Lawrie, A. (2017). The Subnational Region: A Utopia? The Challenge of Governing Through Soft Power. In E. Schoburgh & R. Ryan (Eds.), *Handbook of Research on Sub-National Governance and Development* (pp. 96–115). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-1645-3.ch005

Lewin, E., & Bick, E. (2017). Introduction: Civil Religion and Nationalism on a Godly-Civil Continuum. In E. Lewin, E. Bick, & D. Naor (Eds.), *Comparative Perspectives on Civil Religion, Nationalism, and Political Influence* (pp. 1–31). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0516-7.ch001

Lisney, T., & Kiefer, A. (2016). Cooperation between Local Authorities in Europe as a Force for Strengthening Local Democracy. In U. Sadioglu & K. Dede (Eds.), *Theoretical Foundations and Discussions on the Reformation Process in Local Governments* (pp. 85–109). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0317-0.ch004

Lobina, M., & Bottone, M. (2016). Building Trust in Politics: Causes of Widespread Disillusionment in Latin American Countries. In M. Garita & J. Godinez (Eds.), *Business Development Opportunities and Market Entry Challenges in Latin America* (pp. 127–157). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-8820-9.ch007

Lourenço, R. P. (2016). Evidence of an Open Government Data Portal Impact on the Public Sphere. *International Journal of Electronic Government Research*, *12*(3), 21–36. doi:10.4018/IJEGR.2016070102

Luyombya, D. (2018). Management of Records and Archives in Uganda's Public Sector. In P. Ngulube (Ed.), *Handbook of Research on Heritage Management and Preservation* (pp. 275–297). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-3137-1.ch014

Mabe, M., & Ashley, E. A. (2017). The Local Command Structure and How the Library Fits. In *In The Developing Role of Public Libraries in Emergency Management: Emerging Research and Opportunities* (pp. 44–60). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-2196-9.ch004

Magalhães, F. R., & Santos, C. (2016). Online Financial Transparency: Local Governments of the MERCOSUR Member Countries. In A. Ferreira, G. Azevedo, J. Oliveira, & R. Marques (Eds.), *Global Perspectives on Risk Management and Accounting in the Public Sector* (pp. 252–273). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9803-1.ch013

Maher, C. (2016). Public Policies Impact on Third Sector Social Enterprises in UK Regions. In L. Carvalho (Ed.), *Handbook of Research on Entrepreneurial Success and its Impact on Regional Development* (pp. 246–266). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9567-2.ch012

Maher, C. (2018). Legal Framework, Funding, and Procurement Polices to Accelerate the Growth of the Social Enterprise Ecosystem. In *Influence of Public Policy on Small Social Enterprises: Emerging Research and Opportunities* (pp. 52–83). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-2770-1.ch003

Malik, I., Putera, V. S., & Putra, I. E. (2018). Traditional Leaders in the Reconciliation of Muslim-Christian Conflicts in Moluccas. In A. Campbell (Ed.), *Global Leadership Initiatives for Conflict Resolution and Peacebuilding* (pp. 235–248). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-4993-2.ch011

Manzoor, A. (2016). Cloud Computing Applications in the Public Sector. In Z. Mahmood (Ed.), *Cloud Computing Technologies for Connected Government* (pp. 215–246). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-8629-8.ch009

Marinescu, V. (2016). The Crisis of Public Health as a Media Event: Between Media Frames and Public Assessments. In A. Fox (Ed.), *Global Perspectives on Media Events in Contemporary Society* (pp. 78–89). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9967-0.ch006

Martin, S. M. (2017). Transnational Crime and the American Policing System. In M. Dawson, D. Kisku, P. Gupta, J. Sing, & W. Li (Eds.), Developing Next-Generation Countermeasures for Homeland Security Threat Prevention (pp. 72-92). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0703-1.ch004

Marwah, G. S., & Ladhani, V. (2016). Financial Sector in Afghanistan: Regulatory Challenges in Financial Sector of Afghanistan. In A. Kashyap & A. Tomar (Eds.), *Financial Market Regulations and Legal Challenges in South Asia* (pp. 224–262). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0004-9.ch011

Masrom, M. (2016). E-Government, E-Surveillance, and Ethical Issues from Malaysian Perspective. In R. Cropf & T. Bagwell (Eds.), *Ethical Issues and Citizen Rights in the Era of Digital Government Surveillance* (pp. 249–263). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9905-2.ch013

McNeal, R. S., Schmeida, M., & Holmes, J. (2016). The E-Government Surveillance in the United States: Public Opinion on Government Wiretapping Powers. In R. Cropf & T. Bagwell (Eds.), *Ethical Issues and Citizen Rights in the Era of Digital Government Surveillance* (pp. 208–230). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9905-2.ch011

Mhiripiri, N. A., & Chikakano, J. (2017). Criminal Defamation, the Criminalisation of Expression, Media and Information Dissemination in the Digital Age: A Legal and Ethical Perspective. In N. Mhiripiri & T. Chari (Eds.), *Media Law, Ethics, and Policy in the Digital Age* (pp. 1–24). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-2095-5.ch001

Mishaal, D. A., & Abu-Shanab, E. A. (2017). Utilizing Facebook by the Arab World Governments: The Communication Success Factor. *International Journal of Public Administration in the Digital Age*, *4*(3), 53–78. doi:10.4018/IJPADA.2017070105

Morim, A. C., Inácio, H., & Vieira, E. (2018). Internal Control in a Public Hospital: The Case of Financial Services Expenditure Department. In G. Azevedo, J. da Silva Oliveira, R. Marques, & A. Ferreira (Eds.), *Handbook of Research on Modernization and Accountability in Public Sector Management* (pp. 77–102). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-3731-1.ch005

Mupepi, M. G. (2017). Developing Democratic Paradigms to Effectively Manage Business, Government, and Civil Society: The African Spring. In E. Schoburgh & R. Ryan (Eds.), *Handbook of Research on Sub-National Governance and Development* (pp. 432–462). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-1645-3.ch020

Nam, T. (2016). Citizen Attitudes about Open Government and Government 2.0: A Path Analysis. *International Journal of Electronic Government Research*, *12*(4), 46–66. doi:10.4018/IJEGR.2016100104

Navaratnam, R., & Lee, I. Y. (2017). Globalization as a New Framework for Human Rights Protection. In C. Akrivopoulou (Ed.), *Defending Human Rights and Democracy in the Era of Globalization* (pp. 17–49). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0723-9.ch002

Naz, R. (2016). Challenges En-Route towards E-Governance in Small Developing Island Nations of the South Pacific: The Case of Papua New Guinea. In I. Sodhi (Ed.), *Trends, Prospects, and Challenges in Asian E-Governance* (pp. 1–34). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9536-8.ch001

Nemec, J., Meričková, B. M., Svidroňová, M. M., & Klimovský, D. (2017). Co-Creation as a Social Innovation in Delivery of Public Services at Local Government Level: The Slovak Experience. In E. Schoburgh & R. Ryan (Eds.), *Handbook of Research on Sub-National Governance and Development* (pp. 281–303). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-1645-3.ch013

Nemec, J., Soukopova, J., & Merickova, B. M. (2016). Local Public Service Delivery Arrangements in the Czech Republic and Slovakia. In U. Sadioglu & K. Dede (Eds.), *Comparative Studies and Regionally-Focused Cases Examining Local Governments* (pp. 405–423). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0320-0.ch019

Neupane, A., Soar, J., Vaidya, K., & Aryal, S. (2017). Application of E-Government Principles in Anti-Corruption Framework. In R. Shakya (Ed.), *Digital Governance and E-Government Principles Applied to Public Procurement* (pp. 56–74). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-2203-4.ch003

Nurdin, N., Stockdale, R., & Scheepers, H. (2016). Influence of Organizational Factors in the Sustainability of E-Government: A Case Study of Local E-Government in Indonesia. In I. Sodhi (Ed.), *Trends, Prospects, and Challenges in Asian E-Governance* (pp. 281–323). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9536-8.ch014

Ogunde, O. (2017). Democracy and Child Rights Protection: The Problem of the Nigerian Constitution. In C. Akrivopoulou (Ed.), *Defending Human Rights and Democracy in the Era of Globalization* (pp. 123–144). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0723-9.ch006

Ohsugi, S. (2016). Changing Local Government System in Japan: "Unfinished" Decentralization Reform and Local Revitalization. In U. Sadioglu & K. Dede (Eds.), *Theoretical Foundations and Discussions on the Reformation Process in Local Governments* (pp. 373–399). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0317-0.ch016

Ojedokun, U. A. (2017). Crime Witnesses' Non-Cooperation in Police Investigations: Causes and Consequences in Nigeria. In S. Egharevba (Ed.), *Police Brutality, Racial Profiling, and Discrimination in the Criminal Justice System* (pp. 89–99). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-1088-8.ch005

Okeke, G. S. (2018). The Politics of Environmental Pollution in Nigeria: Emerging Trends, Issues, and Challenges. In A. Eneanya (Ed.), *Handbook of Research on Environmental Policies for Emergency Management and Public Safety* (pp. 300–320). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-3194-4.ch016

Ökten, S., Akman, E., & Akman, Ç. (2018). Modernization and Accountability in Public-Sector Administration: Turkey Example. In G. Azevedo, J. da Silva Oliveira, R. Marques, & A. Ferreira (Eds.), *Handbook of Research on Modernization and Accountability in Public Sector Management* (pp. 18–39). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-3731-1.ch002

Oladapo, O. A., & Ojebuyi, B. R. (2017). Nature and Outcome of Nigeria's #NoToSocialMediaBill Twitter Protest against the Frivolous Petitions Bill 2015. In O. Nelson, B. Ojebuyi, & A. Salawu (Eds.), *Impacts of the Media on African Socio-Economic Development* (pp. 106–124). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-1859-4.ch007

Olukolu, Y. R. (2017). Harmful Traditional Practices, Laws, and Reproductive Rights of Women in Nigeria: A Therapeutic Jurisprudence Approach. In D. Halder & K. Jaishankar (Eds.), *Therapeutic Jurisprudence and Overcoming Violence Against Women* (pp. 1–14). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-2472-4.ch001

Omwoha, J. (2016). The Political Significance and Influence of Talk Radio Debates in Kenya. In L. Mukhongo & J. Macharia (Eds.), *Political Influence of the Media in Developing Countries* (pp. 75–96). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9613-6.ch006

Onyebadi, U., & Mbunyuza-Memani, L. (2017). Women and South Africa's Anti-Apartheid Struggle: Evaluating the Political Messages in the Music of Miriam Makeba. In U. Onyebadi (Ed.), *Music as a Platform for Political Communication* (pp. 31–51). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-1986-7.ch002

Osmani, A. R. (2017). Tipaimukh Multipurpose Hydroelectric Project: A Policy Perspective – Indo-Bangla Priorities, Indigenous Peoples' Rights, and Environmental Concerns. In P. Rao & Y. Patil (Eds.), *Reconsidering the Impact of Climate Change on Global Water Supply, Use, and Management* (pp. 227–251). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-1046-8.ch013

Owolabi, T. O. (2018). Free Media and Bank Reforms in West Africa: Implications for Sustainable Development. In A. Salawu & T. Owolabi (Eds.), *Exploring Journalism Practice and Perception in Developing Countries* (pp. 18–39). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-3376-4.ch002

Oz, S. (2016). Diffusion of Technology via FDI and Convergence of Per Capita Incomes: Comparative Analysis on Europe and the MENA Region. In M. Erdoğdu & B. Christiansen (Eds.), *Handbook of Research on Comparative Economic Development Perspectives on Europe and the MENA Region* (pp. 236–264). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9548-1.ch012

Paez, G. R. (2016). Retaliation in Transitional Justice Scenarios: The Experiences of Argentina and Colombia. In F. Cante & H. Quehl (Eds.), *Handbook of Research on Transitional Justice and Peace Building in Turbulent Regions* (pp. 315–331). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9675-4.ch016

Panara, C. (2016). Concept and Role of Local Self-Government in the Contemporary State. In U. Sadioglu & K. Dede (Eds.), *Theoretical Foundations and Discussions on the Reformation Process in Local Governments* (pp. 42–84). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0317-0.ch003

Panda, P., & Sahu, G. P. (2017). Public Procurement Framework in India: An Overview. In R. Shakya (Ed.), *Digital Governance and E-Government Principles Applied to Public Procurement* (pp. 229–248). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-2203-4.ch010

Pande, V. S., & Kumburu, N. P. (2018). An Overview of Population Growth and Sustainable Development in Sub-Saharan Africa. In K. Teshager Alemu & M. Abebe Alebachew (Eds.), *Handbook of Research on Sustainable Development and Governance Strategies for Economic Growth in Africa* (pp. 480–499). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-3247-7.ch025

Paulin, A. A. (2017). Informating Public Governance: Towards a Basis for a Digital Ecosystem. *International Journal of Public Administration in the Digital Age*, *4*(2), 14–32. doi:10.4018/IJPADA.2017040102

Pečarič, M. (2016). The Awareness of Mentality in Public Administration as the Key for the Management of Its Complexity. In A. Ferreira, G. Azevedo, J. Oliveira, & R. Marques (Eds.), *Global Perspectives on Risk Management and Accounting in the Public Sector* (pp. 1–24). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9803-1.ch001

Perelló-Sobrepere, M. (2017). Building a New State from Outrage: The Case of Catalonia. In M. Adria & Y. Mao (Eds.), *Handbook of Research on Citizen Engagement and Public Participation in the Era of New Media* (pp. 344–359). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-1081-9.ch019

Pohl, G. M. (2017). The Role of Social Media in Enforcing Environmental Justice around the World. In K. Demirhan & D. Çakır-Demirhan (Eds.), *Political Scandal, Corruption, and Legitimacy in the Age of Social Media* (pp. 123–156). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-2019-1.ch006

Popoola, I. S. (2016). The Press and the Emergent Political Class in Nigeria: Media, Elections, and Democracy. In L. Mukhongo & J. Macharia (Eds.), *Political Influence of the Media in Developing Countries* (pp. 45–58). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9613-6.ch004

Popoola, T. (2017). Ethical and Legal Challenges of Election Reporting in Nigeria: A Study of Four General Elections, 1999-2011. In N. Mhiripiri & T. Chari (Eds.), *Media Law, Ethics, and Policy in the Digital Age* (pp. 78–100). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-2095-5.ch005

Porras-Sanchez, F. J. (2016). Local Government and Governance in Mexico. In U. Sadioglu & K. Dede (Eds.), *Comparative Studies and Regionally-Focused Cases Examining Local Governments* (pp. 323–348). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0320-0.ch015

Rahman, K. F. (2016). Human Rights Education for Peace and Conflict Resolution. In K. Pandey & P. Upadhyay (Eds.), *Promoting Global Peace and Civic Engagement through Education* (pp. 89–105). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0078-0.ch006

Rahman, M. S. (2017). Politics-Administration Relations and the Effect on Local Governance and Development: The Case of Bangladesh. In E. Schoburgh & R. Ryan (Eds.), *Handbook of Research on Sub-National Governance and Development* (pp. 256–279). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-1645-3.ch012

Reddy, P. S. (2017). Political-Administrative Interface at the Local Sphere of Government with Particular Reference to South Africa. In E. Schoburgh & R. Ryan (Eds.), *Handbook of Research on Sub-National Governance and Development* (pp. 242–255). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-1645-3.ch011

Reid, M. (2016). Contemporary Local Government Reform in New Zealand: Efficiency or Democracy. In U. Sadioglu & K. Dede (Eds.), *Theoretical Foundations and Discussions on the Reformation Process in Local Governments* (pp. 205–236). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0317-0.ch009

Rombo, D. O., & Lutomia, A. N. (2018). Tracing the Rights of Domestic and International Kenyan House Helps: Profiles, Policy, and Consequences. In N. Mahtab, T. Haque, I. Khan, M. Islam, & I. Wahid (Eds.), *Handbook of Research on Women's Issues and Rights in the Developing World* (pp. 1–18). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-3018-3.ch001

Rouzbehani, K. (2017). Health Policy Implementation: Moving Beyond Its Barriers in United States. In N. Wickramasinghe (Ed.), *Handbook of Research on Healthcare Administration and Management* (pp. 541–552). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0920-2.ch032

Ruano, J. M., & Álvarez, J. M. (2016). Local Structure and Municipal Associations in Spain: Facts, Trends and Problems. In U. Sadioglu & K. Dede (Eds.), *Comparative Studies and Regionally-Focused Cases Examining Local Governments* (pp. 71–90). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0320-0.ch004

Ruffin, F., & Martins, W. K. (2016). Legal Empowerment as Social Entrepreneurship: The KwaZulu-Natal Cases of Bulwer and New Hanover. In Z. Fields (Ed.), *Incorporating Business Models and Strategies into Social Entrepreneurship* (pp. 267–291). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-8748-6.ch015

Ryan, R., & Woods, R. (2017). Decentralization and Subnational Governance: Theory and Praxis. In E. Schoburgh & R. Ryan (Eds.), *Handbook of Research on Sub-National Governance and Development* (pp. 1–33). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-1645-3.ch001

Sabao, C., & Chingwaramusee, V. R. (2017). Citizen Journalism on Facebook and the Challenges of Media Regulation in Zimbabwe: Baba Jukwa. In N. Mhiripiri & T. Chari (Eds.), *Media Law, Ethics, and Policy in the Digital Age* (pp. 193–206). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-2095-5.ch011

Sadioglu, U., & Dede, K. (2016). Current Discussions on the Question: Remarks of Local Government's Reform through Comparative Perspective. In U. Sadioglu & K. Dede (Eds.), *Theoretical Foundations and Discussions on the Reformation Process in Local Governments* (pp. 1–23). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0317-0.ch001

Sadioglu, U., Dede, K., & Yüceyılmaz, A. A. (2016). The Significance of The 2014 Local Elections in Turkey for Decentralisation and Local Autonomy. In U. Sadioglu & K. Dede (Eds.), *Comparative Studies and Regionally-Focused Cases Examining Local Governments* (pp. 364–389). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0320-0.ch017

Sanchez-Barrios, L. J., Gomez-Araujo, E., Gomez-Nuñez, L., & Rodriguez, S. (2016). Opportunities and Challenges for Entrepreneurial Activity and Non-Entrepreneurial Engagement in Colombia. In M. Garita & J. Godinez (Eds.), *Business Development Opportunities and Market Entry Challenges in Latin America* (pp. 170–198). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-8820-9.ch009

Santoro, L., & Capasso, S. (2016). Public Spending and Governance Performance: Evidence from Europe and the MENA Region. In M. Erdoğdu & B. Christiansen (Eds.), *Handbook of Research on Public Finance in Europe and the MENA Region* (pp. 136–155). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0053-7.ch007

Scherr, K. M. (2016). Of Justice, Accountability, and Reconciliation: Preliminary Stocktaking on Transitional Justice Efforts in South Sudan. In F. Cante & H. Quehl (Eds.), *Handbook of Research on Transitional Justice and Peace Building in Turbulent Regions* (pp. 181–200). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9675-4.ch009

Schmeida, M., & McNeal, R. S. (2016). U.S. Public Support to Climate Change Initiatives?: Setting Stricter Carbon Dioxide Emission Limits on Power Plants. In M. Erdoğdu, T. Arun, & I. Ahmad (Eds.), *Handbook of Research on Green Economic Development Initiatives and Strategies* (pp. 605–624). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0440-5.ch026

Shahsavandi, E., Mayah, G., & Rahbari, H. (2016). Impact of E-Government on Transparency and Corruption in Iran. In I. Sodhi (Ed.), *Trends, Prospects, and Challenges in Asian E-Governance* (pp. 75–94). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9536-8.ch004

Shakya, R. K., & Schapper, P. R. (2017). Digital Governance and E-Government Principles: E-Procurement as Transformative. In R. Shakya (Ed.), *Digital Governance and E-Government Principles Applied to Public Procurement* (pp. 1–28). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-2203-4.ch001

Siphambe, H., Kolobe, M., & Oageng, I. P. (2018). Employment Protection Legislation and Unemployment in Botswana. In S. Amine (Ed.), *Employment Protection Legislation in Emerging Economies* (pp. 157–191). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-4134-9.ch008

Slaveski, S., & Popovska, B. (2016). Access to Information in the Republic of Macedonia: Between Transparency and Secrecy. In M. Hadji-Janev & M. Bogdanoski (Eds.), *Handbook of Research on Civil Society and National Security in the Era of Cyber Warfare* (pp. 162–179). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-8793-6.ch008

Snauwaert, D. T. (2016). Securing a Human Right to Peace: A Peace Education Imperative. In K. Pandey & P. Upadhyay (Eds.), *Promoting Global Peace and Civic Engagement through Education* (pp. 19–35). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0078-0.ch002

Sodhi, I. S. (2016). E-Government in China: Status, Challenges, and Progress. In I. Sodhi (Ed.), *Trends, Prospects, and Challenges in Asian E-Governance* (pp. 36–54). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9536-8.ch002

Song, M. Y., & Abelson, J. (2017). Public Engagement and Policy Entrepreneurship on Social Media in the Time of Anti-Vaccination Movements. In M. Adria & Y. Mao (Eds.), *Handbook of Research on Citizen Engagement and Public Participation in the Era of New Media* (pp. 38–56). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-1081-9.ch003

Sonmez, Y. (2016). Latest Developments on the Way to EU Accession: Turkish Case. In V. Erokhin (Ed.), *Global Perspectives on Trade Integration and Economies in Transition* (pp. 166–184). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0451-1.ch009

Stacey, E. (2018). Networked Protests: A Review of Social Movement Literature and the Hong Kong Umbrella Movement (2017). In S. Chhabra (Ed.), *Handbook of Research on Civic Engagement and Social Change in Contemporary Society* (pp. 347–363). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-4197-4.ch020

Stamatakis, N. (2017). Authority and Legitimacy: A Quantitative Study of Youth's Perceptions on the Brazilian Police. In S. Egharevba (Ed.), *Police Brutality, Racial Profiling, and Discrimination in the Criminal Justice System* (pp. 151–213). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-1088-8.ch009

Sugars, J. M. (2017). Refoulement and Refugees. In C. Akrivopoulou (Ed.), *Defending Human Rights and Democracy in the Era of Globalization* (pp. 181–197). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0723-9.ch008

Tabansky, L. (2016). Israel's Cyber Security Policy: Local Response to the Global Cybersecurity Risk. In M. Hadji-Janev & M. Bogdanoski (Eds.), *Handbook of Research on Civil Society and National Security in the Era of Cyber Warfare* (pp. 475–494). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-8793-6.ch021

Tan, S. F. (2017). Local Representation in Australia: Preliminary Findings of a National Survey. In E. Schoburgh & R. Ryan (Eds.), *Handbook of Research on Sub-National Governance and Development* (pp. 368–384). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-1645-3.ch017

Tavares, M. D., & Rodrigues, L. L. (2018). Strategic Responses of Public Sector Entities to GRI Sustainability Reports. In G. Azevedo, J. da Silva Oliveira, R. Marques, & A. Ferreira (Eds.), *Handbook of Research on Modernization and Accountability in Public Sector Management* (pp. 159–188). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-3731-1.ch008

Thakre, A. G. (2017). Sexual Harassment of Women in Workplace in India: An Assessment of Implementation of Preventive Laws and Practicing of Therapeutic Jurisprudence in New Delhi. In D. Halder & K. Jaishankar (Eds.), *Therapeutic Jurisprudence and Overcoming Violence Against Women* (pp. 135–146). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-2472-4.ch009

Tiwary, A. (2017). Key Elements of CEAF. In *Driving Efficiency in Local Government Using a Collaborative Enterprise Architecture Framework: Emerging Research and Opportunities* (pp. 25–61). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-2407-6.ch002

Toscano, J. P. (2017). Social Media and Public Participation: Opportunities, Barriers, and a New Framework. In M. Adria & Y. Mao (Eds.), *Handbook of Research on Citizen Engagement and Public Participation in the Era of New Media* (pp. 73–89). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-1081-9.ch005

Tosun, M. S., Uz, D., & Yılmaz, S. (2016). Fiscal Decentralization and Local Borrowing in Turkish Provinces. In M. Erdoğdu & B. Christiansen (Eds.), *Handbook of Research on Public Finance in Europe and the MENA Region* (pp. 505–519). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0053-7.ch022

Treiber, M. (2016). Informality and Informalization among Eritrean Refugees: Why Migration Does Not Provide a Lesson in Democracy. In F. Cante & H. Quehl (Eds.), *Handbook of Research on Transitional Justice and Peace Building in Turbulent Regions* (pp. 158–180). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9675-4.ch008

Tshishonga, N. (2017). Operation Sukuma-Sakhe: A New Social Contract for Decentralized Service Delivery and Responsive Governance in KwaZulu-Natal. In E. Schoburgh & R. Ryan (Eds.), *Handbook of Research on Sub-National Governance and Development* (pp. 304–323). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-1645-3.ch014

Tsygankov, S., & Gasanova, E. (2017). Electronification of the Public Procurement System: A Comparative Analysis of the Experience of the Russian Federation and Ukraine. In R. Shakya (Ed.), *Digital Governance and E-Government Principles Applied to Public Procurement* (pp. 267–277). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-2203-4.ch013

Tüzünkan, D. (2018). The International Migration Movements and Immigrant Policies From the Ottoman Empire 1299 to Republican Turkey 2016. In Ş. Erçetin (Ed.), *Social Considerations of Migration Movements and Immigration Policies* (pp. 13–45). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-3322-1.ch002

Uchenna, E., & Iyoha, F. (2016). IFRS, Foreign Investment, and Prevailing Institutional Structure in Africa. In E. Uchenna, M. Nnadi, S. Tanna, & F. Iyoha (Eds.), *Economics and Political Implications of International Financial Reporting Standards* (pp. 83–104). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9876-5.ch005

Ugangu, W. (2016). Kenya's Difficult Political Transitions Ethnicity and the Role of Media. In L. Mukhongo & J. Macharia (Eds.), *Political Influence of the Media in Developing Countries* (pp. 12–24). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9613-6.ch002

Vaillancourt, F., & Bird, R. M. (2016). Decentralization in European and MENA Countries: Glue or Solvent? In M. Erdoğdu & B. Christiansen (Eds.), *Comparative Political and Economic Perspectives on the MENA Region* (pp. 1–27). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9601-3.ch001

Vakkala, H., & Leinonen, J. (2016). Current Features and Developments of Local Governance in Finland: The Changing Roles of Citizens and Municipalities. In U. Sadioglu & K. Dede (Eds.), *Theoretical Foundations and Discussions on the Reformation Process in Local Governments* (pp. 304–327). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0317-0.ch013

Valenzuela, R., & Ochoa, A. (2018). Open Mexico Network in the Implementation of National Open Data Policy. In A. Kok (Ed.), *Proliferation of Open Government Initiatives and Systems* (pp. 50–67). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-4987-1.ch003

Vaquero, M. G., & Saiz-Alvarez, J. M. (2016). Smart Cities in Spain – Policy, Sustainability, and the National Plan: New Political Measures, Agents, and Sustainability. In A. Goswami & A. Mishra (Eds.), *Economic Modeling, Analysis, and Policy for Sustainability* (pp. 266–283). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0094-0.ch014

Waller, P. (2017). Co-Production and Co-Creation in Public Services: Resolving Confusion and Contradictions. *International Journal of Electronic Government Research*, *13*(2), 1–17. doi:10.4018/IJEGR.2017040101

Washington, A. L. (2016). The Interoperability of US Federal Government Information: Interoperability. In A. Aggarwal (Ed.), *Managing Big Data Integration in the Public Sector* (pp. 1–19). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9649-5.ch001

Whyte, D. (2016). The Neo-Colonial State of Exception in Occupied Iraq. In F. Cante & H. Quehl (Eds.), *Handbook of Research on Transitional Justice and Peace Building in Turbulent Regions* (pp. 298–313). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9675-4.ch015

Williams, K. Y. (2016). The Need for a National Data Breach Notification Law. In E. de Silva (Ed.), *National Security and Counterintelligence in the Era of Cyber Espionage* (pp. 190–202). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9661-7.ch011

Wodecka-Hyjek, A. (2017). Co-Operation between the Public Administration and Non-Profit Organisations as a Condition of the Development of Public Entrepreneurship: On the Example of the Selected World Solutions. In V. Potocan, M. Ünğan, & Z. Nedelko (Eds.), *Handbook of Research on Managerial Solutions in Non-Profit Organizations* (pp. 253–275). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0731-4.ch012

Yang, J. G. (2016). The Principle of Nexus in E-Commerce Tax. In I. Lee (Ed.), *Encyclopedia of E-Commerce Development, Implementation, and Management* (pp. 329–341). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9787-4.ch025

Yang, J. G. (2016). What Is New York's Amazon Tax on Internet Commerce? In I. Lee (Ed.), *Encyclopedia of E-Commerce Development, Implementation, and Management* (pp. 397–409). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9787-4.ch029

Yang, J. G., Lohrey, P. L., & Lauricella, L. J. (2016). Current Developing Trend of Sales Tax on E-Business. In I. Lee (Ed.), *Encyclopedia of E-Commerce Development, Implementation, and Management* (pp. 1045–1057). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9787-4.ch074

Yang, K. C., & Kang, Y. (2017). Social Media, Political Mobilization, and Citizen Engagement: A Case Study of the March 18, 2014, Sunflower Student Movement in Taiwan. In M. Adria & Y. Mao (Eds.), *Handbook of Research on Citizen Engagement and Public Participation in the Era of New Media* (pp. 360–388). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-1081-9.ch020

Yeo, S., Birch, A. S., & Bengtsson, H. I. (2016). The Role of State Actors in Cybersecurity: Can State Actors Find Their Role in Cyberspace? In E. de Silva (Ed.), *National Security and Counterintelligence in the Era of Cyber Espionage* (pp. 217–246). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9661-7.ch013

Zhao, B. (2018). A Privacy Perspective of Open Government: Sex, Wealth, and Transparency in China. In A. Kok (Ed.), *Proliferation of Open Government Initiatives and Systems* (pp. 29–48). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-4987-1.ch002

Zhi-Wei, T., Fei, D., & Ping, J. (2016). An Empirical Study on Temporal Evolution Rule of Network Clustering Behavior. *International Journal of Information Systems for Crisis Response and Management*, *8*(4), 56–70. doi:10.4018/IJISCRAM.2016100104

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Ziska Fields is an Associate Professor in the College of Business and Economics, Department of Business Management at the University of Johannesburg (UJ). Prof Fields is an Alumna at the University of KwaZulu-Natal (UKZN) in Durban and an external researcher and habilitator at the Chair of Innovation Research and Technology Management, Chemnitz University of Technology. She has recently qualified as a Neethling Brain Instruments (NBI) Practitioner focusing on identifying and developing peoples preferred thinking styles and to help them think more creatively at school, university and in the workplace. She has been appointed as the Ambassador for the World Creativity and Innovation Week (WCIW) and World Creativity and Innovation Day (WCID) in South Africa, as well as some southern African countries like Namibia and Botswana for 2021. The purpose of this role is to connect cities, regions and countries to the WCIW creative community and to foster creativity by promoting, empowering and supporting the WCIW's creativity mission. Professor Fields has 13 years' experience in the Financial Industry and 12 years' experience in Higher Education experience. Her qualifications include a BA degree (Communication Sciences), Diploma in Management Studies, MBA (Cum Laude) and PhD (Business Administration). She teaches and supervises various Management and Entrepreneurship focus area at undergraduate and postgraduate levels. Her research and supervisory focus areas include Entrepreneurship, Higher Education, Responsible Management and Human Resources with a focus on the Fourth Industrial Revolution. Her main research focus area and passion is theoretical and applied creativity across various disciplines and contexts. She developed two theoretical models to measure creativity in South Africa, focusing on youth and tertiary education. She edited five books published by IGI Global titled "Incorporating Business Models and Strategies into Social Entrepreneurship", "Collective creativity for responsible and sustainable business practice", "Handbook of Research on Information and Cyber Security in the Fourth Industrial Revolution", "Responsible, Sustainable, and Globally Aware Management in the Fourth Industrial Revolution" and "Imagination, Creativity and Responsible Management in the Fourth Industrial Revolution". She is currently busy with a book titled "Using Global Collective

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Makhosazana Magigaba attended the University of Zululand and studies social sciences where she had found a passion for Industrial Psychology. She completed her bachelor's degree and an honours degree in Industrial Psychology and had ambi-

tions of registering as a professional psychologist. However, the best laid plans are often overhauled by destiny, as the young and energetic Dr Vezi-Magigaba or Nana to her friends, was asked to conduct a lecturing stint within the Faculty of Commerce, Administration and Law. Soon enough there was an opportunity to study in the United States, the Dean at that time recognised Dr Vezi-Magigaba as being the ideal candidate to represent the faculty, the university and the country as a whole at an international tertiary institution. After completing her MBA at the Jackson State University in the United States, Nana became enamoured towards all things business and subsequently took up her role as lecturer in the Department of Business Management at the University of Zululand. Over the years she ploughed back her knowledge in developing young minds towards business oriented careers. Her passion for entrepreneurship grew when she was asked to lecture this module, so much so that she became involved in an international student entrepreneurial body ENACTUS. Having coached the university students to measurable success in the national ENACTUS competition, she was rewarded with attending the ENACTUS world cup with her high-achieving stars. She has received numerous plaudits for her involvement in ENACTUS. She achieved all this by also playing the leadership role of Head of Department of Business Management. However, her crowning achievement was attaining her PhD amidst such work pressures under which most mortals will fold. Her active involvement and passion for ENACTUS inspired her PhD which was based on the influence of ENACTUS ON the growth of women-owned businesses within the region. She is in the process of publishing widely in the area on entrepreneurship and is slowly but surely becoming an expert in this academic field.

Ana Matic is an alumni of the Strategic Foresight and Innovation (SFI) programme at the OCAD University, where she holds the graduate MDes degree. Her research focuses on innovation at the intersection of complexity, human-factors and microwork as means of building equitable futures. Ana is a co-founder of Chaordic Design, an innovation agency in Toronto, Canada.

Goran Matic is part of the Doctoral program at the University of Brighton, where his work focuses on sustainable innovation initiatives at the intersection of collaboration and complexity. His research spans multiple fields, with emphasis on systemic design - as an integration of design thinking, systems thinking, foresight and cybernetics - inclusive of semiotics and transdisciplinary humanities. He is also a member of the OCAD University's Strategic Innovation Lab (sLab), where he facilitated various trans-institutional and governmental participants in the SSHRC-supported "Digital Governance" project - which focused on transforming government practice in the digital era.

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