THE INFORMATION LITERACY FRAMEWORK

Case Studies of Successful Implementation

EDITED BY

HEIDI JULIEN
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The Information Literacy Framework

ASSOCIATION FOR LIBRARY AND INFORMATION SCIENCE EDUCATION

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ROWMAN & LITTLEFIELD
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Published by Rowman & Littlefield
An imprint of The Rowman & Littlefield Publishing Group, Inc.
4501 Forbes Boulevard, Suite 200, Lanham, Maryland 20706
www.rowman.com

6 Tinworth Street, London, SE11 5AL, United Kingdom

British Library Cataloguing in Publication Information Available

Library of Congress Cataloging-in-Publication Data

Names: Julien, Heidi E. (Heidi Elizabeth), 1960– editor. | Gross, Melissa, editor. | Latham, Don, 1959– editor.
Title: The information literacy framework : case studies of successful implementation / edited by Heidi Julien, Melissa Gross, Don Latham.
Description: Lanham : Rowman & Littlefield, [2020] | Series: Association for Library and Information Science Education | Includes bibliographical references and index. | Summary: "This edited book helps demystify how to incorporate ACRL's Framework for Information Literacy for Higher Education into information literacy instruction in higher education as well as how to teach the new Framework to pre-service librarians as part of their professional preparation"—Provided by publisher.
Identifiers: LCCN 2019038974 (print) | LCCN 2019038975 (ebook) | ISBN 9781538121436 (cloth) | ISBN 9781538121443 (paperback) | ISBN 9781538121450 (epub)
Subjects: LCSH: Information literacy—Study and teaching (Higher)—United States—Case studies. | Academic libraries—Relations with faculty and curriculum—United States—Case studies. | Librarians—Training of—United States—Case studies.
Classification: LCC ZA3075 .I5357 2020 (print) | LCC ZA3075 (ebook) | DDC 028.7071/173—dc23
LC record available at https://lccn.loc.gov/2019038974
LC ebook record available at https://lccn.loc.gov/2019038975

The paper used in this publication meets the minimum requirements of American National Standard for Information Sciences—Permanence of Paper for Printed Library Materials, ANSI/NISO Z39.48-1992.

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Foreword

The chapter authors and the editors of this volume have done a great service for librarians and other educators who would like to expand their understanding of the potential impact and use of the *Framework* and add to their repertoire of ways for integrating it into their work.

If members of the Association of College and Research Libraries (ACRL) task force that was developing the *Framework for Information Literacy for Higher Education* had foreseen the publication of this book, comprising such insightful and inspirational chapters, we would have been incredibly heartened. Those who were active in information literacy at the time of the *Framework*'s creation through its adoption know that the *Framework* engendered heated discussion and responses that ran the gamut from enthusiasm and support to dismay and rejection. Heidi Julien, Melissa Gross, and Don Latham, coeditors of this volume, have documented attitudes toward and experiences with the new *Framework* via surveys and interviews.[1]

Members of the task force were encouraged that there was intense engagement from the profession. Librarians and other educators shared suggestions, critiqued initial drafts, and made valuable contributions that helped to make the *Framework* what it is.

The task force members[2] had a number of goals in mind as they worked to shape the entity that would move us beyond the *Standards*. These goals are noted in the *Framework*'s introduction and in an editorial that Craig Gibson and I, task force cochairs, wrote while the truly dedicated group was still working on the final version of the document.[3] The focus of these goals range from students to librarians to faculty members, from session to course to academic program level, and from curricular to cocurricular. Many were drawn from issues of long-standing concern among academic librarians, and individual goals cluster around important themes.

Key goals included:

- Grappling with the ramifications of the complex information ecosystem in which learners work
- Emphasizing conceptual understandings, not skills, that underpin myriad evolving information-related situations
- Meeting a critical need for flexibility, given the wide range of institution types and students who would be affected
- Recognizing the affective and metacognitive components of information literacy, not only the cognitive and behavioral ones
- Incorporating components of metaliteracy
- Highlighting the expanded role of students as information producers
- Addressing the ethical issues raised by the enlarged scope of information production and use
- Expanding conversations and meaningful collaborations with faculty members
- Making connections with broader educational issues and frameworks from other disciplines to facilitate finding common ground
- Using heightened faculty awareness to move beyond single class period instruction to more robust course-infused or programmatic information literacy initiatives
- Setting the stage for librarians to claim enhanced roles in educational endeavors, such as action research, learning assessment, program planning, and cocurricular initiatives

The chapters in this book explore these goals, providing evidence of how thoughtful, creative, and engaged librarians and other educators have been as they leverage the *Framework* to enhance learning. Of course, that learning is not limited to students—you will be privy to the accounts by chapter authors of the learning processes they and their colleagues underwent while implementing elements of the *Framework*.

I encourage you to keep an eye out for how these goals are represented throughout this book and to think about how they intersect with your work with the *Framework*. You will find them in Sarah Steele and her coauthors' exploration of how the *Framework* might be used to build deeper engagement with faculty members. Indeed, this theme runs throughout many of the chapters. Brianna B. Buljung describes how teaching and learning librarians at the Colorado School of Mines built a foundational *Framework*-based information literacy program from scattered and repetitive one-shot sessions. Kelly Diamond and Alyssa Wright make connections with another field by drawing from the *Framework in Postsecondary Writing*; Andrea Baer discusses the importance of flexibility; and Mary Beth Burgoyne and Kim Chuppa-Cornell align their *Framework*-based changes with a general education program assessment, leading to campus-wide leadership roles. I could mention chapter after chapter that highlight connections with the goals I've enumerated. But I shan't. I encourage you to read the chapters, find the connections on your own, and also identify where the

authors have met additional goals they themselves have set, even if the process started with the discomfort that Liza Oldham notes.

In a first-year course in which a colleague and I work closely with the instructor, we highlight the value of a growth mind-set. Students complete a unit in our digital badging system called "Failing Better,"[4] after which we use Breakout EDU[5] to reinforce and make more vivid both the idea of being open to failing better—or using what you have learned from failing to help you succeed—and the value of a growth mind-set. The challenges these students face, and the ways in which they react to them, remind me of the challenges the *Framework* presents to those of us grappling with making it a meaningful part of our teaching, our campuses' assimilation of information literacy as core to students' education, and therefore to student learning.

In the editorial Craig and I wrote, we emphasized that for students to be moved to think beyond their assumed proficiency with information, "we need to introduce concepts that will hold their attention, change their viewpoint, and provide revelatory 'aha' moments."[6]

I have come away from reading the chapters in this book with a host of ideas for providing those "aha" moments and with great enthusiasm for sharing these ideas with others. I expect you will also be inspired. Please consider letting others know about your own initiatives, extending the important local communities of practice described by Kim Pittman, Amy Mars, and Trent Brager to national and global levels.

Trudi Jacobson
Distinguished Librarian
University at Albany, SUNY

NOTES

1. Melissa Gross, Don Latham, and Heidi Julien, "What the Framework Means to Me: Attitudes of Academic Librarians toward the ACRL Framework for Information Literacy for Higher Education," *Library & Information Science Research* 40, no. 3–4 (July 2018): 262–68, https://doi.org/10.1016/j.lisr.2018.09.008; Don Latham, Melissa Gross, and Heidi Julien, "Implementing the ACRL Framework: Reflections from the Field," *College & Research Libraries* 80, no. 3 (2019): 386–400.

2. While this information is provided in appendix 2 of the *Framework*, I would like to provide the names of those involved here, in tribute to the insight and dedication they brought to the process. As of November 2014, members of the task force included: Craig Gibson, Professor, Ohio State University Libraries (cochair); Trudi E. Jacobson, Distinguished Librarian and Head, Information Literacy Department, University at Albany, SUNY, University Libraries (cochair); Elizabeth Berman, Science and Engineering Librarian, University of Vermont; Carl O. DiNardo, Assistant Professor and Coordinator of Library Instruction/Science Librarian, Eckerd College; Lesley S. J. Farmer, Professor, California State University–Long Beach; Ellie A. Fogarty, Vice President, Middle States Commission on Higher Education; Diane M.

Fulkerson, Social Sciences and Education Librarian, University of South Florida in Lakeland; Merinda Kaye Hensley, Instructional Services Librarian and Scholarly Commons Co-coordinator, University of Illinois at Urbana–Champaign; Joan K. Lippincott, Associate Executive Director, Coalition for Networked Information; Michelle S. Millet, Library Director, John Carroll University; Troy Swanson, Teaching and Learning Librarian, Moraine Valley Community College; Lori Townsend, Data Librarian for Social Sciences and Humanities, University of New Mexico; Julie Ann Garrison, Associate Dean of Research and Instructional Services, Grand Valley State University (Board Liaison); Kate Ganski, Library Instruction Coordinator, University of Wisconsin–Milwaukee (Visiting Program Officer, from September 1, 2013, through June 30, 2014); Kara Malenfant, Senior Strategist for Special Initiatives, Association of College and Research Libraries (Staff Liaison).

3. Craig Gibson and Trudi E. Jacobson, "Informing and Extending the Draft ACRL Information Literacy Framework for Higher Education: An Overview and Avenues for Research," *College & Research Libraries* 75, no. 3 (May 2014): 250–54.

4. The Metaliteracy Badging platform is currently a closed system. However, the entire contents is open and available at https://sites.google.com/view/metaliteracy/home?authuser=0. The contents of the Failing Better Quest may be found at https://sites.google.com/view/metaliteracy/empowered-learner/metacognitive-reflection/failing-better?authuser=0.

5. Susan Detwiler, Trudi Jacobson, and Kelsey O'Brien, "BreakoutEDU: Helping Students Break out of Their Comfort Zones," *College & Research Libraries News* 79, no. 2 (February 1, 2018): 62, https://doi.org/10.5860/crln.79.2.62.

6. Gibson and Jacobson, "Informing and Extending the Draft ACRL Information Literacy Framework for Higher Education," 250.

Preface

Publication of the Association for College and Research Libraries' (ACRL) *Framework for Information Literacy for Higher Education* (http://www.ala.org/acrl/standards/ilframework), adopted in early 2016, marked a watershed for information literacy instruction in the United States as well as many other nations. The *Framework* opened a world of learning opportunities and posed several significant challenges as librarians were asked to abandon the previous ACRL *Information Literacy Competency Standards for Higher Education* (https://alair.ala.org/handle/11213/7668), first adopted in the year 2000. The *Standards* had offered instructional librarians a reasonably straightforward template of standards, performance indicators, and outcomes that could be adopted and implemented in most libraries. The *Framework*, however, was a new animal. It provided no templates and significantly altered both the definition and scope of information literacy as a concept. A national survey of instructional librarians conducted in the United States in 2016 explored initial reactions of librarians to the *Framework* and found that librarians believed that it had opened a range of pedagogical strategies, including providing a structure for teaching, providing a guiding ideology, encouraging more conversational and interactive teaching, and supporting more active learning, including peer-to-peer teaching and group work, as well as flipped classrooms.[1] The survey respondents told us that the frames were being used as the subtext for skills-based teaching and that they were using the frames' terminology selectively. These respondents also told us that the most successful strategies for engaging with the *Framework* included starting conversations and training with other librarians on-site and with the faculty, using the frames to develop learning outcomes, teaching a limited number of frames in a single session, and implementing the frames over time. The greatest challenges to implementation of the *Framework* were time (limitations on the time provided by faculty to offer information literacy instruction, time for preparation, time for assessment, and time to

update previous information literacy documentation); concerns that the *Framework* concepts are vague and difficult to teach and to assess; scalability; librarian resistance to the *Framework*; buy-in from faculty, administrators, and other librarians; and resistance from faculty who continued to prefer skills-based instruction.

Since that time, multiple professional-development opportunities have been offered to help librarians transition to the *Framework*, and a rich literature discussing the benefits and ongoing challenges to adopting the *Framework* has emerged. *The Information Literacy Framework: Case Studies of Successful Implementation* is offered as a contribution to that literature, with the eighteen chapters articulating a range of case studies in implementation of the *Framework* across academic contexts, as well as numerous examples of efforts to develop the understandings and skill sets of current instructional librarians, of teaching faculty, and of preservice librarians. Chapters were selected by the editors following an open call for contributions. We specifically sought chapters representing diverse organizational contexts, as well as contributions from authors outside of the United States. The chapters included in the book represent diverse contexts and geographic locations, and all met high standards for prospective interest, usefulness, and quality of organization and writing.

The first part of *The Information Literacy Framework: Case Studies of Successful Implementation* includes case studies focused on preparing to use the *Framework*. Mohamed Berray introduces a process used to map threshold concepts to course objectives in a political science course at a large public university, modeling curricular collaboration with teaching faculty. Melissa Harden and Anna Michelle Martinez-Montavon describe the development of a workshop intended to help disciplinary faculty incorporate information literacy concepts from the *Framework* into course content and assignments. Holly Hendrigan, Keshav Mukunda, and Diana Cukierman share how they approached the assessment of student mastery of threshold concepts presented in an information literacy unit embedded in a computing science course. Kim Pittman, Amy Mars, and Trent Brager discuss strategies for creating professional development opportunities and building communities of practice around the *Framework.* Leslie M. Ross discusses action research performed at a small liberal arts university for the purpose of transforming a stand-alone standards-based information literacy course into one informed by the *Framework.* Sarah Steele, Steve Bahnaman, Brooke Taxakis, Ron Epps, and Elizabeth Dobbins describe how using *Framework* language in their private university's Information Fluency Plan helped foster collaborations between librarians and faculty and provided a way for the library to market their information literacy services.

The second part of the book contains case studies of instruction using the *Framework*. Leanna Fry Balci and Peter J. Rich describe the development of an online tutorial based on the *Framework* for students in an advanced writing course at a large private university. Brianna B. Buljung offers a case study at a large public university, where a first-year foundation program based on the *Framework* was developed, focusing on the successes and the challenges experienced during the design and implementation of that program. Gina Calia-Lotz describes efforts at a community

college library to integrate *Framework* concepts with the teaching of writing. Kelly Diamond and Alyssa Wright explain how they redesigned a credit-bearing library research course at a major public university, incorporating the *Framework* into the course revision. Paulette A. Kerr and Jessica C. Lewis describe the development of information literacy instruction practices, including the first round of implementation of the ACRL *Framework*, at the University of the West Indies Mona Library. Liza Oldham describes her own information literacy journey and how she has allowed herself, at first reluctantly, to be guided by the *Framework.*

The third and final part of the book includes case studies of educating for the *Framework*. Andrea Baer focuses on professional development based on the *Framework* for librarians, tying the training she has developed with careful consideration of librarians' beliefs about teaching and learning. Mary Beth Burgoyne and Kim Chuppa-Cornell offer another case study focusing on training for librarians in a community college environment that uses the *Framework* as a touchstone. Thomas P. Mackey explores the linkages between metaliteracy and the ACRL *Framework* and examines a metaliterate learning activity through the lens of each of the frames and their associated knowledge practices and dispositions. Bharat Mehra and Keren Dali report on a unique collaboration between an LIS course instructor and a journal editor to demonstrate how the *Framework* can be used in diversity education to promote student interest in active civic and professional participation. Carla Stoffle, Nicole Pagowsky, and Yvonne Mery discuss how librarians and iSchool faculty at a major public university used the *Framework* to develop a teaching certificate for preservice librarians. Finally, Susan Rathbun-Grubb explains how to incorporate Integrated Threshold Concept Knowledge into a graduate-level reference and instruction course for preservice librarians.

These chapters are intended to provide real case-study examples of how librarians are working through the challenges to instructional practice raised by the *Framework*. We expect that the book will be useful to those who teach information literacy in higher education contexts, who are seeking a compilation of advice about teaching the *Framework* based on actual practice, as well as administrators who are charged with implementing the *Framework* in academic libraries. The book will also be useful to faculty members in library and information science who teach preservice librarians how to instruct in information literacy, and to their students.

NOTE

1. Heidi Julien, Melissa Gross, and Don Latham, "Survey of Information Literacy Instructional Practices in U.S. Academic Libraries," *College & Research Libraries* 79, Number 2 (2018): 179–99.

I

PREPARING TO USE THE *FRAMEWORK*

1

Strategies for Mapping Information Literacy Threshold Concepts to Course Objectives in Political Science

Mohamed Berray

The *Framework for Information Literacy for Higher Education* is a flexible cluster of concepts that builds on existing knowledge and contextual understandings of disciplines to enhance holistic learning experiences. Conceptual learning using the *Framework* completes knowledge gaps, addresses stumbling blocks and learning deficiencies, and introduces pedagogical methodologies rooted in foundational concepts of the disciplines in which they are applied. These foundational concepts, later referred to as *threshold concepts*, are a cognitive framework of curricular inquiries that identify fundamental ideas essential to comprehend the subject. To help students attain this threshold of proficiency and comprehension, librarians have collaborated with teaching faculty to identify core concepts in their disciplines and have designed disciplinary engagements through assignments and hands-on labs that cultivate immersive learning experiences.

This chapter will introduce experiences applying threshold concepts through curriculum mapping in course offerings in the Political Science Department at Florida State University (FSU). In collaboration with faculty at the Political Science Department, the political science librarian mapped student learning outcomes in core courses in the international affairs specialization with information literacy threshold concepts in library instruction. This exercise enhanced collaboration between the FSU Libraries and the Political Science Department and contributed to designing learning spaces that blend cognitive, affective, and behavioral learning skills. This recognition for different student learning styles and abilities resulted in a customized curriculum that caters for the individual needs of students and empowers them as both creators and consumers of knowledge.

THRESHOLD CONCEPTS

According to Jan H. F. Meyer and Ray Land, threshold concepts represent core ideas and processes that define "ways of thinking and practicing"[1] that are often unnoticed in learning environments. Char Booth and Brian Mathews defined threshold concepts as "an approach to learning that emphasizes the incremental accumulation of disciplinary knowledge."[2] This definition of threshold concept by Booth and Mathews as "an epistemological progression"[3] aligns with Meyer and Land's definition[4] since it impresses on librarians to be receptive to the evolving needs of students, and sequence information literacy concepts along the progression of learning (figure 1.1).

Figure 1.1. Linear Framework of Dispositions

There are five characteristics of threshold concepts:

1. *Transformative:* an ontological and a conceptual shift in the learner's perspective and subjectivity; involves a reconfiguration of the learner's prior conceptual schema
2. *Troublesome:* can seem incoherent and counterintuitive to the learner's dispositions, and can be troublesome to acquire and integrate in the learner's experience
3. *Irreversible:* threshold concepts, once learned cannot be unlearned
4. *Integrative:* brings together different aspects of the subject that previously seemed unrelated
5. *Bounded:* delineates a conceptual space serving a specific disciplinary purpose; eliminates potential confusion in the use of disciplinary language commonly used in everyday life; extended use of disciplinary language (discursiveness) is indicative of the learner's grasp of key concepts in the discipline

According to Meyer and Land, the characteristics of threshold concepts are rooted in and developed around stumbling blocks in disciplinary learning.[5] As a result, they are identifiable in the spectrum of student learning objectives, allowing for the application of the appropriate concept.

The Association of College and Research Libraries' (ACRL) *Framework for Information Literacy for Higher Education*,[6] developed with the characteristics of the threshold concepts in mind, is made of six frames:

1. Authority Is Constructed and Contextual
2. Information Creation as a Process

3. Information Has Value
4. Research as Inquiry
5. Scholarship as Conversation
6. Searching as Strategic Exploration

The frames provide librarians an opportunity to connect library resources and critical-thinking practices with disciplinary concepts. According to Lori Townsend and colleagues, these frames help to address questions like: "why do I need to learn about this database?; what is the point of citing this paper correctly?; why is this course required?" and so on.[7] These questions, albeit very commonly faced by librarians, should be used in instructional design. Knowledge of the ACRL *Framework* equips librarians with the tools to anticipate challenges in the classroom and sequence the best timing for key frames within the syllabi so they are seamless in application to course objectives.

CURRICULUM MAPPING

Definition

Although first popularized by Heidi H. Jacobs[8] and primarily intended for secondary education, curriculum mapping has been applied to the broad landscape of higher education. In the facilitator guide following Jacobs's publication, Ann Johnson and Crista Carlile defined curriculum map as a document that illustrates "essential questions, the content that will be covered, skills students will demonstrate if they understand the content, assessments, and activities."[9] Heidi Buchanan and colleagues defined curriculum mapping as "a process for systematically evaluating components of an instructional program for cohesiveness, proper sequencing, and goal achievement."[10] In their view, curriculum maps identify "important components of a program's curricula, places them in relation to each other in a visual format, and captures an overarching curricular structure to support cognitive scaffolding for further analysis."[11] One of the best definitions of curriculum mapping comes from Booth and Mathews, who defined curriculum mapping as "a process of plotting out in a linear or grid format the sequence and related learning outcomes of curriculum in a given instructional context."[12] In associating threshold concepts and curriculum mapping, Booth and Mathews described curriculum mapping as an approach to understanding the structural and contextual dimensions of the learner's experience.[13]

This chapter will discuss curriculum mapping as the instructional practice of identifying the best timing and placement of information literacy concepts within a disciplinary curriculum, and steps involved in their application. Curriculum mapping will be discussed as a tool for course-integrated library instruction that enhances

the quality of departmental teaching and collaboration with faculty. There are many advantages to this perspective, and to curriculum mapping, as it:

1. Embraces the critical-thinking components and the lifelong learning intents of the *Framework for Information Literacy for Higher Education*
2. Customizes the relevance of library instruction to meet the specialized needs of disciplinary curricula
3. Distinguishes bibliographic instruction and freshman seminar from course-integrated library instruction
4. Provides opportunities for librarians to view departmental curricula from the point of view of both students and teaching faculty
5. Informs librarians of changing contexts in the curricula
6. Highlights challenges within learning environments and helps librarians develop methods to work with students in overcoming them
7. Provides substantive insights for meaningful synergic integration of library instruction in the disciplines
8. Offers pedagogical strategies to sequence the placement of library instruction in basic and more advanced courses within departmental curricula; according to Kristin A. Bullard and Diana H. Holden, curriculum maps create more authentic (point-of-need) learning opportunities for students[14]
9. Leads to enhanced collaboration with faculty

Applications at Florida State University

The Political Science Department at Florida State University is a nationally ranked department with more than thirteen hundred courses and majors in American politics, international relations, comparative politics, and public policy. Added to the university's requirements for graduation, the undergraduate major in political science includes at least thirty semester hours in political science coursework that must include at least three of the following introductory political science courses:

1. POS 1041: American Government
2. CPO 2002: Introduction to Comparative Government and Politics
3. INR 2002: Introduction to International Relations
4. PAD 3003: Public Administration in American Society
5. PUP 3002: Introduction to Public Policy

Upon completion of the above requirements, students are then required to take a research methods in political science class (POS 3713).

The graduate program is a thirty-six-hour nonthesis program that includes twenty-four hours of coursework and twelve hours of internship/practicum. Twelve of the twenty-four hours of coursework are electives that must be taken from the course pool below:

1. POS 5203: Fundamentals of Political Management
2. POS 5274: The Campaign Process
3. POS 5276: Political Communication and Message Development
4. POS 5335 Political Research

These programs offer a solid undergraduate and graduate education in the liberal arts and sciences that prepares graduates for a variety of careers.

As part of the FSU Libraries instructional program and outreach to the Political Science Department, the political science librarian collaborates with teaching faculty in designing classroom experiences that are inclusive of the disciplinary teaching and learning objectives of the department. The involvement of teaching faculty in the design and delivery of library instruction serves many purposes. It

1. builds better and stronger relationships with the library;
2. posits the librarian as an integral part in course delivery, instead of a guest lecturer for one-shot instructional purposes only;
3. promotes the relevance and pertinence of library services to the department; and
4. situates the library within the larger institutional context of teaching and learning.

Florida State University Libraries uses curriculum mapping as a tool to integrate information literacy instruction into departmental curricula. Through this service, the libraries have adapted library instruction and maintained its relevance within the changing interdisciplinary contexts of course curricula at FSU. Curriculum mapping has also been used to address faculty concerns and questions about how library instruction and information literacy concepts are best suited to enhance learning objectives and student learning outcomes. When library instruction is aligned with departmental objectives and taught as part of a course alongside faculty, instead of as a stand-alone instruction, it serves the purposes of embedded librarianship and has greater application in the course. Course-integrated library instruction also has the added advantage of increasing the libraries' stake in developing course content. Since FSU Libraries does not have dominion over departmental courses, curriculum mapping has been the only way that it has advised the Political Science Department on its curriculum and about the timing and placement of information literacy concepts. Through this process, librarians tap into departmental thinking, learning about faculty research interests, areas of specializations, learning environments, teaching assessments, curricula changes, departmental priorities, and challenges faced as well as how FSU Libraries can create niches of engagement with every aspect of course delivery and student learning. In return, there is acceptance by both faculty and librarians of the need for mutual learning of the different approaches and techniques used in instructional delivery. Faculty have become more conversant with information literacy concepts and how to integrate them into their courses. Librarians, who

sometimes do not have backgrounds in the subjects of the departments they serve, have learned disciplinary languages and expectations, and have designed knowledge practices to captivate student engagement.

METHODOLOGY

The first and major step in curriculum mapping (and sequenced course-integrated information literacy exercises) at the FSU Political Science Department was to gain insight and comprehend the full suite of graduate and undergraduate programs and general requirements at the "pre–political science" liberal studies level, and their gradual progression to full majors in political science.

When undergraduate students (freshman admits) come in with a pre–political science designation, they first have to meet the liberal studies requirement and reach fifty-two credit hours. Only then can they request to switch to political science majors by taking thirty hours of coursework in political science, twenty-one of which are at the 3000 and 4000 levels and selected from the list of introductory undergraduate political science courses provided earlier. Junior transfers are admitted directly at the standard political science major designation.

Gaining this insight of student progression from general liberal studies to political science majors involves visually assessing pre–political science prerequisites and their gradual advancement to specialty majors. This assessment of the spread of course offerings provides opportunities for targeted instruction at the most crucial intersections and crosswalks of general liberal studies and specializations in political science.

There are various methods that can be employed in understanding the full spectrum of offerings at the departmental level and within a given specialization. The major assets and often readily available sources of course information are course catalogs, program information bulletins, and institutional effectiveness reports. Occasionally, new temporary courses as well as elective courses from outside the department are added to departmental offerings and count toward a particular major. When this happens, close collaboration with the academic coordinator is of utmost relevance to ensure that the library has the most accurate and up-to-date information about course offerings. Communication with faculty is also important to confirm that courses listed in the catalog were not canceled and that courses taught by adjunct faculty are counted. There are three levels of information gathering:

1. *At the department level:* What are the major degree programs?
2. *At the specialization level:* What are the required courses for a given specialization?
3. *At the course level:* What are the major learning objectives in the course syllabus?

Using these levels as a guide, the following steps were applied to map degree programs, areas of specializations, and required courses at the FSU Political Science Department.

Step 1: Degree Program Level

Because the bachelor of science (BS) and the bachelor of arts (BA) degrees in political science at FSU have the same major requirements, the major determination at the undergraduate level for the purposes of the FSU Libraries' curriculum-mapping project was program objectives after the declaration of majors in political science. This distinction is important at FSU given the differences in liberal studies requirements for the BA and BS degrees. The BA in political science requires a minimum of twelve hours of foreign language and additional liberal content beyond the normal liberal studies basic requirements. Foreign language courses and extra liberal studies requirements outside of the major requirements for the political science degree were not used for this curriculum-mapping project. Curriculum maps do not necessarily have to be encompassing of every course. However, a good representative sample of core requirements for the degree must be considered. These core degree requirements build on one another and make it possible to identify where each requirement falls within a map from introductory to intermediate and more advanced.

The following are program objectives for the undergraduate degree in political science at FSU:

Bachelor's Degree in Political Science (SLOs)

1. Data Analysis Skills
2. The Behavior of Political Actors
3. Interest Aggregation and Representation
4. The Role of Political Institutions
5. Understanding Research Designs
6. Causation versus Correlation

Step 2: Areas of Specializations and Required Courses

With knowledge of the departmental objectives at the degree level, the next step was to determine the areas of specialization and their required courses. The following are the areas of specializations in the Political Science Department and their respective required courses:

1. Comparative Politics: CPO 2002 (Introduction to Comparative Government and Politics)
2. International Relations: INR 2002 (Introduction to International Relations)
3. American Government: POS 1041 (American Government)
4. Public Policy: PUP 3002 (Introduction to Public Policy)

5. Public Administration: PAD 3003 (Public Administration in American Society)

A visual representation of mapping degree programs to areas of specializations and courses offered is shown in figure 1.2.

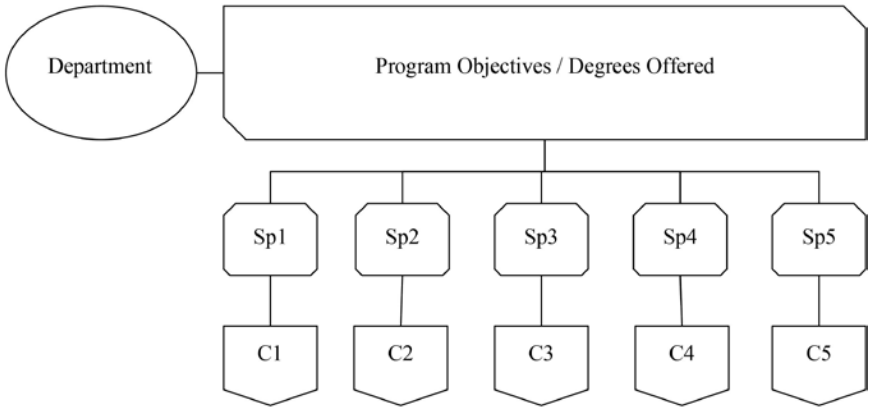

Figure 1.2. Conceptual Map of Degrees, Specializations, and Courses Offered

Understanding the alignment of broad departmental student learning outcomes with specific degree objectives for the different areas of specialization and identifying how these translate into courses taught at the department make it possible to identify integral points for the intersections of information literacy concepts with core curricular instruction.

Step 3: Course Review

1. For each course, review course syllabi and identify information literacy concepts where they exist, and where they should if they do not exist. Both the existence and lack of information literacy concepts in a course syllabus provide opportunities for collaboration with faculty. In introducing new information literacy concepts where they do not exist, it is best to frame them within the context of course learning objectives.
2. Share revised integrated course syllabus with the responsible faculty and receive feedback. The meanings and rationale for information literacy concepts are introduced to the faculty.
3. Integrate faculty feedback in revised curriculum and prepare for class.

This process of mapping core disciplinary objectives with library instruction informs librarians of best strategies for outreach, design of library instruction, and

collection development. It provides practical insight into challenges and opportunities for the library's engagement, especially from the point of view of the instructor.

COURSE-SPECIFIC CURRICULUM MAPPING: INTERNATIONAL AFFAIRS

According to Ronald M. Harden, there are four main components of a curriculum map at the course level:

1. what is taught (content, and learning outcomes);
2. how it is taught (learning resources and opportunities);
3. when it is taught (timing and sequence of the curriculum); and
4. measures used to determine whether the student has achieved the expected learning outcomes (assessment).[15]

To illustrate this for the Political Science Department and to help understand where and how information literacy instruction should be integrated in specific courses in the department, a representative sample was taken from the international affairs specialization. INR 3502: International Organizations was taken as the sample course because it is a 3000-level course, and it is at that level that students move from the pre–political science designation to a full political science major. INR 3502 is also one of the specialization courses that has an introductory course at the general liberal studies pre–political science level, INR 2002: Introduction to International Affairs. This introductory course is used as the stepping-stone at the 2000 level for greater student understanding of more advanced concepts in international relations.

It became clear in targeting the international affairs specialization for curriculum mapping that the learning objectives in the introductory INR 2002 seamlessly feed into the more advanced INR 3502. This allowed for the mapping process to progressively introduce basic concepts in INR 2002 and more advanced concepts in INR 3502. Targeting these two classes also meant that all BA and BS political sciences students specializing in international affairs were reached by the library and went through a structured course-integrated information literacy instruction. Understanding the progression of courses in a given specialization provides a structured means to offer an adaptable scale of information literacy instructions that are sequenced to supplement student learning outcomes in core curriculum courses.

The following sections show practical applications of information literacy threshold concepts to course curricula in INR 3502, the advanced course for students specializing in international affairs.

INR 3502: International Organizations: Student Learning Outcomes

The objectives of this class are divided into substantive and skills-based goals. The substantive goals are:

1. Develop students' knowledge of the basic patterns and facts of global governance
2. Learn the major theories and arguments developed by scholars of international organizations to explain these patterns, and to understand their claims and predictions

The skills-based goals are:

1. Develop students' ability to think analytically and critically about issues and events
2. Apply theories to facts to generate stronger understanding and make more persuasive arguments
3. Strengthen verbal communication, problem-solving, and research skills
4. Read at least one major newspaper or periodical with substantial international coverage, such as the *New York Times*, *Washington Post*, *Wall Street Journal*, *Financial Times*, BBC World News, or the *Economist*
5. Read FSU's Academic Honor Policy

INR 3502: Information Literacy Dimensions

Information literacy dimensions represent the end goals of integration of information literacy skills in course curricula. These dimensions are achieved through a set of knowledge practices that are the beginning of the learner's engagement in foundational disciplinary concepts.[16] Information literacy dimensions also help translate in understandable language what threshold concepts represent. For threshold concepts to be appreciated and best adapted to course curricula, they must be translated into understandable terms for the faculty, and they must make it possible for the librarian to develop hands-on activities and knowledge practices that capture learning interests and engaged learning for students. In producing the map for this course, the faculty were informed of the learning dimensions as a demonstrated impact of the library's involvement. Although some professors would want to know more about threshold concepts and the rationale and origin of the dimensions, the six frames in the ACRL *Framework* are primarily to guide librarians as they develop engaged knowledge practices that adapt differing learning environments and disciplinary concepts to students' dispositions and learning styles. Lastly, learning dimensions must be sequenced to progressively introduce the basic concepts at the start and more advanced concepts later. The former *Information Literacy Competency Standards for Higher Education* had a clearly articulated set of discrete skills that serves as a good basis for

Table 1.1. A Map of Frames and Information Literacy Dimensions

Frames	*Information Literacy Dimensions*
Searching as Strategic Exploration	Define the extent of the information needed. Develop new understandings and pursue alternate sources.
Research as Inquiry	Iterative Research. Ask questions whose answers provide additional lines of inquiry. Use concept maps to develop increasingly complex connections between concepts. Access the needed information effectively and efficiently.
Scholarship as Conversation	Develop familiarity with various sources of evidence, methods, and modes of discourse in the discipline. Identify competing perspectives and new forms of scholarly research.
Authority Is Constructed and Contextual	Examine all evidence. Ask questions about suitability and relevance for current information need. Acknowledge bias, especially those that privilege some sources over others. Seek alternative sources. Recognize schools of thought and discipline-specific paradigms.
Information Creation as a Process	Recognize various forms and formats of information. Match information products with information. Use information effectively to accomplish a specific purpose.
Information Has Value	Recognize intellectual property, rules of citation, plagiarism, and copyright. Make deliberate and informed choices about when to comply with and when to contest the value of information.

a mixed-method approach to the teaching and learning process. Table 1.1 represents information literacy dimensions that were developed for this course.

To help faculty understand the processes involved in integrating information literacy concepts, it worked best to frame information literacy dimensions into practices that demonstrate integrable learning outcomes that enhance student learning. As noted earlier, information literacy dimensions build on one another in a sequential manner to provide a seamless iterative process to research. Figure 1.3 shows how literacy dimensions build on one another, allowing the librarian to sequence information literacy instruction from basic to more advanced.

The visual representation in figure 1.3 makes it easier to determine where and how information literacy dimensions can be mapped with course learning outcomes. A key challenge in this exercise is that the language used in class syllabi sometimes does not lend itself to an equivalent learning dimension. When this is the case, conversations with the faculty prove to be very useful in deciphering the meanings of disciplinary concepts and in understanding the intended class activities in the syllabus to help reach students' learning goals. Given the practical nature of knowledge practices, approaching the conversation from a practical standpoint provides greater

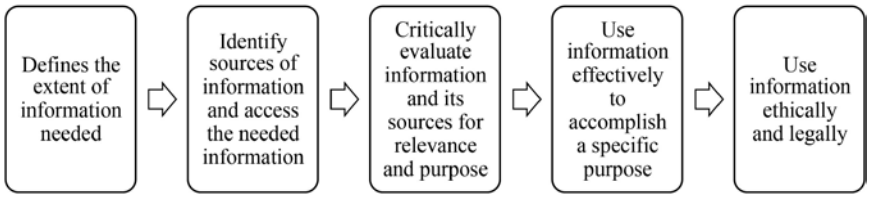

Figure 1.3. Sequenced Learning Dimensions

insight into equivalent learning dimensions and knowledge practices. For the INR 3502 course, the mapping in table 1.2 was done with student learning outcomes and information literacy dimensions.

INR 3502 was particularly unique in that the class syllabus had both substantive and skill-based goals. Substantive goals are those disciplinary concepts that students are required to grasp in order to demonstrate mastery of the subject. The skill-based goals in the context of the course are knowledge practices and activities that lead students to understanding substantive goals. This deliberate stipulation in the course

Table 1.2. A Map of INR 3502, ACRL Frames, and Information Literacy Learning Dimensions

Threshold Concept	*Information Literacy Dimensions*	*INR 3502: International Organizations*
Searching as Strategic Exploration	Define the extent of the information needed. Develop new understandings and pursue alternate sources.	Think analytically and critically about issues and events.
Research as Inquiry	Iterative Research. Ask questions whose answers provide additional lines of inquiry. Use concept maps to develop increasingly complex connections between concepts. Access the needed information effectively and efficiently.	Learn basic patterns and facts of global governance. Strengthen verbal communication, problem-solving, and research skills.
Scholarship as Conversation	Develop familiarity with various sources of evidence, methods, and modes of discourse in the discipline. Identify competing perspectives and new forms of scholarly research.	Understand major theories and arguments by scholars of international organizations to explain patterns and claims and predictions.

Threshold Concept	*Information Literacy Dimensions*	*INR 3502: International Organizations*
Authority Is Constructed and Contextual	Examine all evidence. Ask questions about suitability and relevance for current information need. Acknowledge bias, especially those that privilege some sources over others. Seek alternative sources. Recognize schools of thought and discipline-specific paradigms.	Apply theories to facts to generate stronger understanding and make more persuasive arguments.
Information Creation as a Process	Recognize various forms and formats of information. Match information products with information. Use information effectively to accomplish a specific purpose.	Read at least one major newspaper or periodical with substantial international coverage, such as the *New York Times*, *Washington Post*, *Wall Street Journal*, *Financial Times*, BBC World News, or the *Economist*.
Information Has Value	Recognize intellectual property, rules of citation, plagiarism, and copyright. Make deliberate and informed choices about when to comply with and when to contest the value of information.	FSU's Academic Honor Policy.

syllabus was very useful in providing a pathway to integrate information literacy concepts. The substantive and skills-based goals are also akin to each other to allow the two goals to build on one another in a dynamic flow that builds on previous knowledge to acquire new knowledge.

The mapping steps highlighted in tables 1.1 and 1.2 help the librarian develop insights into meaningful ways for synergistic integration of library instruction in the disciplines. This integration aligns learning objectives with threshold concepts and learning dimensions and is the first step in classroom engagement. In implementing the map in table 1.2 and achieving full success in the classroom, librarians would, however, need to develop knowledge practices and hands-on activities to help students achieve the intent of the learning dimensions. Table 1.3 represents a set of knowledge practices that were used in implementing learning dimensions in course

Table 1.3. A Map of INR 3502, Information Literacy Dimensions, and Knowledge Practices

INR 3502: International Organizations	*Information Literacy Dimensions*	*Knowledge Practices*
Think analytically and critically about issues and events.	Define the extent of the information needed. Develop new understandings and pursue alternate sources.	i. Match information needs and search strategies to appropriate search tools. Evaluate library and non-library resources based on need. ii. Design and refine needs and search strategies as necessary. Consult the bibliography of articles of interest to gain insight into similar publications. iii. Use different searching language (e.g., controlled vocabulary, keywords, natural language) appropriately. Most articles have "keywords" just underneath the abstract. They represent key concepts of the research. Use these as a guide. iv. Understand how information systems are organized in order to access relevant information. If a journal has a particular volume dedicated to a certain subject, dig deep into the journal publication for similar articles of interest.
Strengthen verbal communication, problem-solving, and research skills. Learn basic patterns and facts of global governance.	Iterative Research. Ask questions whose answers provide additional lines of inquiry. Use concept maps to develop increasingly complex connections between concepts. Access the needed information effectively and efficiently.	i. Develop a research question based on the facts of global governance. Identify information gaps and reexamine existing and conflicting information. ii. Where applicable, develop a clear and narrowly focused thesis. iii. Determine an appropriate scope of investigation—break complex questions into simple ones. iv. Develop a research plan. Do not be haphazard. v. Synthesize ideas gathered from multiple sources. vi. Draw reasonable conclusions based on analysis and interpretation of information.
Understand major theories and arguments by scholars of international organizations to explain patterns and claims and predictions.	Develop familiarity with various sources of evidence, methods, and modes of discourse in international affairs. Identify competing perspectives and new forms of scholarly research on international organizations.	i. Summarize changes (patterns) in scholarly perspective over time on. Identify chronology of events where available. ii. Recognize that a given scholarly work may not represent the only—or even the majority—perspective on the issue. Evaluate each source for issues of evidentiary weakness, including bias or gaps. iii. Place library resources in context, such as a historical perspective, to demonstrate understanding of the meaning and interpretations of information. iv. Qualify and integrate evidence found in scholarly theories and arguments of international affairs.

Apply theories to facts to generate stronger understanding and make more persuasive arguments.	Examine all evidence. Ask questions about suitability and relevance for current information need. Acknowledge bias, especially those that privilege some sources over others. Seek alternative sources. Recognize schools of thought and discipline-specific paradigms.	i. Define different types of authority as it pertains to international affairs and international organizations. These could be scholars, international bodies like the UN, nation-states, etc. ii. Use available research tools and indicators of authority to determine the credibility of sources, while understanding the elements that might temper this credibility. For example, in international affairs, are there standards (international conventions and treaties) that guide the actions of state parties to verify the credibility of states on a particular issue? What are the political motivations that influence states at the national level? Are there other sources of information to access individual actions? iii. Understand varying viewpoints. Acknowledge that authorities in a certain discipline may be challenged by authorities in another. Recognize that authoritative content may be packaged in different formats, and in different sources. Expand research to different types of sources, including news sources and other media.
Read at least one major newspaper or periodical with substantial international coverage, such as the *New York Times*, *Washington Post*, *Wall Street Journal*, *Financial Times*, BBC World News, or the *Economist*.	Recognize various forms and formats of information. Match information products with information. Use information effectively to accomplish a specific purpose.	i. Assess relevance and fit for different information sources in international affairs. ii. Recognize that information may be perceived differently based on its format. iii. Understand that choices made during the research process impact the purposes for which the information resource will be used and the message it conveys.
FSU's Academic Honor Policy	Recognize intellectual property, rules of citation, plagiarism, and copyright. Make deliberate and informed choices about when to comply with and when to contest the value of information.	i. Give credit to original ideas through proper attribution. ii. Articulate the purpose and distinguishing characteristics of copyright, fair use, open access, and public domain. iii. Recognize issues of access or lack of access to information sources.

syllabi. Consistent with the threshold concepts, the knowledge practices in table 1.3 are adapted from the ACRL *Framework*.[17]

Note that since classes within a given specialization are sequenced to build on one another, not every frame has to be addressed in each class. Frames can be adapted to the level of the class as well as the time of the semester that the class is taught. Exclusion of a certain frame or learning dimension also does not mean that it is not covered in other ways. Librarians explain both knowledge practices and dispositions in ways not specified in the ACRL *Framework*. For example, lack of access to resources can be explained through promotion of interlibrary loan services to help students understand that resources not available in the library's catalog should not be excluded from the research process. Students also need to know about budget constraints that limit the library's ability to acquire all needed resources. Not only do these conversations help set realistic expectations for engagement, they also open doors to conversations about alternative means of access, including institutional repositories and resources in the public domain. Learning dimensions, knowledge practices, and student learning dispositions, therefore, as prescriptive as they might sound, help librarians situate library instruction within a pedagogical framework that provides a level of intentionality in aligning basics of information literacy instruction with threshold concepts. In implementing the various aspects of a full-fledged curriculum map, librarians should also consider employing library resources that help simplify knowledge practices. Many databases, especially in the social sciences, help students with concept mapping, look for background resources, provide snapshot data, and derive summary conclusions of major research projects. These resources, where available, provide interactive learning opportunities and provide hands-on practical equivalence of learning dimensions.

MANAGING EXPECTATIONS

Curriculum maps do not have to be (and probably should not be) all-encompassing of every course offered. It is good practice to always start mapping exercises at the departmental level to identify required courses and their prerequisites and start with those as a means of reaching the most students in a short amount of time. Within a given specialization, map a good representative sample of courses required within the specialization and identify where each course falls within a rubric—basic, intermediate, advanced. There are also many instances where librarians are called upon, especially early in the semester for new incoming students, to teach general research skills and introduce library resources. These instructions, whether invited or requested by the librarian, are useful to provide foundational skills and a baseline threshold of understanding of library resources and how to use them. Introductory lessons also provide faculty with a reference point about library resources relevant to their class. Understanding how and when students should expect to use library

resources makes it easy for faculty to structure course content and assignments that make it possible for students to interact with the library. In developing a curriculum map for structural learning dimensions, every dimension should be sequenced from basic to more advanced foundational skills and applied throughout the curriculum. There are many advantages to this approach. Sequencing knowledge practices for learning dimensions from basic to intermediate to advanced helps librarians evaluate the validity of information literacy instructions for their content and sequence and for the structure of delivery. It provides "well-integrated and linear learning experience"[18] that increases student understanding of core threshold concepts.

CONCLUSION

A lot has been said already about the advantages of curriculum mapping, how it is implemented, and the opportunities it provides librarians as stakeholders in improving the overall quality of higher education. As libraries and librarians adapt to sweeping technological changes and the evolutionary landscape in higher learning, our roles are redefined. This redefinition of academic and liaison librarianship duties requires us to be in conformity with current thinking on new modes of the creation and dissemination of knowledge, including a deep understanding of, and an ostensible engagement in, the fundamental mission of the institutions we serve. By designing our services with a focus on the needs and expectations of our institutional scholars, libraries have become an essential hub for engaged learning. Through our instructional services, libraries enhance the learning objectives of departmental teaching and create critical thinking and learning thresholds that have positioned liaison librarians as partners and co-collaborators in student success. A powerful tool that has been used to enhance this faculty-librarian collaboration is threshold concept mapping. Threshold concept maps provide deeper insights into the classroom learning experience and into faculty mind-set in developing these activities. Using these insights, librarians can create sequenced course-integrated information literacy instructions with affective learning outcomes along with the exclusive cognitive focus of course curricula. This creative approach optimizes our skills to adapt to the changing expectations and emerging constraints in higher education, and it leverages our strengths in areas with the greatest impact on student success. A key advantage of curriculum mapping is that it provides a proactive approach to faculty engagement and removes the image of librarians as invited guests. If anything, faculty have appreciated library instructions customized to class assignments and student learning outcomes in the class syllabus. Not only do these increase interest in research, they also lead to an increase in use of library resources. By observing and developing keen awareness of the instructional landscape within specific departments, librarians are best prepared to support the needs of these academic departments and can employ tools and techniques to target high-impact areas in the curriculum.

NOTES

1. Jan H. F. Meyer and Ray Land, "Threshold Concepts and Troublesome Knowledge: Linkages to Ways of Thinking and Practising within the Disciplines," in *Improving Student Learning Theory and Practice—Ten Years On*, ed. Chris Rust, Proceedings of the 2002 10th International Symposium Improving Student Learning (Oxford: Oxford Centre for Staff & Learning Development, May 2003), https://www.semanticscholar.org/paper/Threshold-Concepts-and-Troublesome-Knowledge-%3A-to-Meyer-Land/a7cb01b9cf2ca0a407ad0530fb4810d778a9403e.

2. Char Booth and Brian Mathews, "Understanding the Learner Experience: Threshold Concepts and Curriculum Mapping," invited paper presented at the California Academic & Research Libraries Conference, April 7, 2012, San Diego, California, http://www.carl-acrl.org/conference2012/2012CARLproceedings/Understanding the Learner Experience_Booth Mathews2012.pdf.

3. Ibid., 3.

4. Meyer and Land, "Threshold Concepts and Troublesome Knowledge: Linkages," 12.

5. Jan H. F. Meyer and Ray Land, "Threshold Concepts and Troublesome Knowledge: Epistemological Considerations and a Conceptual Framework for Teaching and Learning. Higher Education," *Higher Education* 49, no. 3 (2005): 373–88.

6. Association of College and Research Libraries, *Framework for Information Literacy for Higher Education*, filed by the ACRL Board on February 2, 2015, adopted by the ACRL Board on January 11, 2016, http://www.ala.org/acrl/standards/ilframework.

7. Lori Townsend et al., "Threshold Concepts and Information Literacy," *portal: Libraries and the Academy* 11, no. 3 (2011): 853–69.

8. Heidi H. Jacobs, *Getting Results with Curriculum Mapping* (Alexandria, VA: Association for Supervision and Curriculum Development, 2004), 22–33.

9. Ann Johnson and Crista Carlile, "Getting Results with Curriculum Mapping: Facilitator's Guide," Association for Supervision and Curriculum Development, Alexandria, VA, http://www.ascd.org/ASCD/pdf/siteASCD/video/GettingResultsCurriculumMapping.pdf.

10. Heidi Buchanan et al., "Curriculum Mapping in Academic Libraries," *New Review of Academic Librarianship* 21, no. 1 (2015): 94–111, doi: 10.1080/13614533.2014.1001413.

11. Buchanan et al., "Curriculum Mapping in Academic Libraries," 95.

12. Booth and Mathews, "Understanding the Learner Experience," 5.

13. Ibid.

14. Kristen A. Bullard and Diana H. Holden, "Hitting a Moving Target: Curriculum Mapping, Information Literacy and Academe," Proceedings of the 34th Annual LOEX Conference, Moving Targets: Understanding Our Changing Landscape(s), May 4–6, 2006, https://commons.emich.edu/loexconf2006/29/.

15. Ronald M. Harden, "AMEE Guide No. 21: Curriculum Mapping: A Tool for Transparent and Authentic Teaching and Learning," *Medical Teacher* 23, no. 2 (2001):123–37, doi: 10.1080/01421590120036547.

16. Knowledge practices demonstrate the adaptive learning methods and techniques that increase understanding of information literacy concepts. Through these techniques, learners develop the capacity and a propensity to cross a disciplinary threshold with their comprehension of learning concepts. By understanding knowledge practices, the models

employed by the *Framework for Information Literacy* have empowered students as partners in the creation of knowledge and imposes on them an understanding of the ethics of information use.

17. ACRL, *Framework*.
18. Buchanan et al., "Curriculum Mapping in Academic Libraries," 96.

2

Faculty Workshops: Incorporating the *Framework* and Embedding Information Literacy in Undergraduate Courses

Melissa Harden and Anna Michelle Martinez-Montavon

The introduction of the *Framework for Information Literacy for Higher Education* encourages teaching faculty to design "curricula and assignments that foster enhanced engagement with the core ideas about information and scholarship within their disciplines."[1] However, disciplinary faculty are often unsure how to facilitate student engagement with information literacy in an effective way and may not even be aware that they are communicating these concepts to their students. Librarians have an opportunity to help faculty understand that the *Framework* can be a powerful tool when planning assignments, activities, and discussions and can assist faculty in surfacing information literacy concepts in their courses.

At the University of Notre Dame, first-year students are required to take a writing-intensive seminar in the disciplines called a university seminar. These courses often present students with their first opportunities to conduct research or engage with a particular discipline at a deeper level. To begin introducing the *Framework* to our campus and to embed some of these concepts in first-year courses, we—the instructional design librarian and the first year experience librarian—designed a workshop for disciplinary faculty scheduled to teach a university seminar. In this workshop, we use the *Framework* to explore the breadth and depth of information literacy and help faculty identify the ways in which they already incorporate information literacy instruction in their courses. Faculty have the chance to identify gaps and plan activities that can help students build the skills described in the frames.

For many faculty the phrase *information literacy* brings to mind constructing search strings or navigating database interfaces. While these are important skills, one of the primary goals of the *Framework* workshop is for faculty to gain a better understanding of information literacy—particularly that it is more than just teaching students how to search. We also aim to demonstrate that faculty can collaborate with librarians to design activities and assignments that foster information literacy

skills instead of just inviting them to lead a one-shot instruction session to introduce a database. Another goal of the workshop is for faculty to begin to think more consciously about assignment design. We aim to show them concrete ways to provide students with opportunities to develop information literacy skills, through both smaller assignments or activities as well as scaffolded steps within a larger project, such as a research paper. Our belief is that giving students opportunities to develop and improve information literacy skills in a disciplinary context allows them to engage with course content more deeply.

In this chapter, we will review relevant literature on faculty and librarian partnerships as it relates to information literacy workshops and course design. We will describe the main elements of the workshop and the common questions, comments, and feedback we have received from faculty participants. We will close the chapter with strategies for implementing similar workshops at other campuses, including some of the challenges others might experience and ways to work around them.

LITERATURE REVIEW

Much has been written about collaborations between librarians and disciplinary faculty.[2] Though disciplinary faculty identify information literacy skills as very important for students' academic success and recognize that students often struggle to locate and evaluate information,[3] they may not see themselves as having a primary role in teaching information literacy concepts. As a result, they turn to librarians to provide this information to their students, often by requesting a one-shot library session. Though faculty recognize the importance of information literacy and acknowledge the expertise of librarians, they often work with librarians by asking them to teach their students how to use databases rather than collaborating with them on assignment or course design.[4] Although this limited collaboration can be fruitful under the right circumstances, faculty may be reluctant to expand the collaboration because they do not want to "give up class time"[5] or because they may not fully realize the variety of ways in which they can incorporate librarians' expertise into their courses. Because "[f]aculty can be a help or a hindrance in our efforts to reach students," collaboration with faculty is key in helping students develop information literacy skills.[6] As Michelle Reale notes, "Faculty may have heard of information literacy, but not all of them have worked with its precepts or understand it at the level of academic librarians."[7]

The first step in expanding collaboration is establishing a shared responsibility between librarians and disciplinary faculty for teaching information literacy.[8] As Barbara Fister notes, information literacy "doesn't exclusively belong to librarians"; rather, it is a "shared endeavor."[9] Patricia Iannuzzi states, "Librarians have an opportunity to use information literacy to help faculty succeed in their own objectives."[10] In an article in the *Chronicle of Higher Education*, David Gooblar argues that the onus is on disciplinary faculty to teach information literacy, especially given

today's information environment. Even so, he recommends that faculty "[r]each out to librarians before the semester starts. Talk about your course goals and ask for their suggestions on how to integrate information literacy into your teaching and assignments,"[11] describing the type of collaboration we aim to foster through our workshops. Still, not all faculty are aware they can work with librarians in this way; therefore, as Reale states, "it is often incumbent upon librarians to take the lead in actively showing instructional faculty exactly what it is we do."[12]

Providing librarian-led professional development opportunities for faculty can help foster a more holistic view of students' information literacy skills on campus. There is a long history of librarians implementing faculty workshops, seminars, or other development opportunities in order to train faculty in information literacy skills. Fister describes the importance of providing faculty with "opportunities to delve deeper into the complexities of making wise choices among abundant evidence, of formulating creative questions, of making sense of sources and using them to build something new."[13] She further describes a variety of faculty development options, including institutes aimed at providing faculty time for a sustained exploration of information literacy skills in their courses.

Several decades ago, the University of California, Berkeley Libraries created a series of seminars directed at faculty in order to help them learn new tools and search techniques. While the focus of these seminars was on bibliographic tools and search strategies, the success of the program demonstrates that faculty are willing to learn from and about the library when given the opportunity.[14] We transfer these findings to our setting, where the focus is on information literacy more broadly rather than only on bibliographic tools.

Yvonne Nalani Meulemans and Allison Carr describe how the librarians at California State University San Marcos changed the information that their library presented at the New Faculty Institute to address faculty's common misperceptions and assumptions about how students conduct research and to design research assignments that were more meaningful for students.[15] The authors even go on to advocate that librarians decline "problematic or uniformed requests from professors" that do not serve students well—such as "Take the student on a tour of the library so they can learn how to do research" or "Tell them not to use the Internet and use scholarly sources"—and instead engage in conversation with faculty as full partners in student learning.[16]

Librarians at Towson University developed a Librarian-Faculty Collaboration Model that combines building relationships with faculty development, providing the groundwork for instruction development, and resulting in customized instruction.[17] Through these efforts, the authors found positive results in terms of improved faculty-librarian collaborations. They found that "the process progresses into information literacy objectives becoming integrated into instruction development. In the best cases, the collaboration continues over time to evolve into highly customized, course-integrated information literacy instruction."[18] Others have found similar success in implementing faculty workshops that open the door to further collaborations

between librarians and faculty.[19] While the initial process of creating and facilitating a workshop is time consuming, the material can be easily updated, reused, and adapted to different contexts, making it a worthwhile investment of the library's resources.[20]

With the advent of the *Framework*, librarians have been finding ways to bring it to faculty. Troy Swanson co-led a six-week course in which disciplinary faculty engaged deeply with the *Framework* and discussed how the frames could influence their teaching. Swanson notes that the *Framework* resonated with the faculty participants, and he and his colleagues plan to use the *Framework* as a tool for opening more conversations with faculty.[21] Librarians at Keene State College ran a two-day workshop titled "Defining and Teaching Information Literacy," which focused on helping participants develop a disciplinary understanding of information literacy grounded in the *Framework* so they could design activities and assignments to help students develop their information literacy skills.[22] As Sara Miller points out, the *Framework* combined with the Decoding the Disciplines model can "aid in surfacing tacit values, practices, and assumptions related to information literacy in their fields."[23]

Despite the outreach efforts of librarians, many disciplinary faculty are still unfamiliar with the *Framework*. One survey of faculty at two institutions about the *Framework* found that faculty consistently rated information literacy as very important and that they "value[d] the concepts embodied in the *Framework* as goals for student success."[24] However, faculty found a lack of clarity and jargon to be major barriers to interacting with the *Framework*. This is a clear indication that librarians can play an important role in "connect[ing] the frames in everyday terminology or disciplinary language that reflect faculty's concerns regarding their students' IL skills."[25] In our workshops, we attempt to break through the jargon of the *Framework* and help faculty see direct connections between the language of the *Framework* and the language they use in their discipline.

MAIN ELEMENTS OF WORKSHOPS

The goal of our workshops is for faculty to see information literacy as something deeply embedded within their courses that they can and do incorporate effectively into their assignments and lessons. Taking a cue from the *Framework*'s incorporation of backward design, we kept this goal in mind when planning the learning experience.[26] This influenced many of our decisions, from logistics to pedagogy, in developing effective and compelling content. When it came to developing content, we approached our workshop design with a threshold concepts lens. As librarians, we see the ways in which faculty live and breathe information literacy concepts. However, faculty themselves often take those research-related knowledge practices and dispositions for granted, making it hard for them to understand why students get stuck in the process. Our workshops use the *Framework* as a tool to help faculty reflect on

their teaching practices, identify the implied core information practices within their courses, and scaffold a path to mastery for their students.

We hold workshops in the second half of the spring semester, after courses have been approved for the following year. This timing allows us to target faculty scheduled to teach university seminars in the coming year. It also allows the faculty members time to absorb and reflect on the information from the workshop before implementing it the following year, particularly if they have taught this course in prior semesters. We work with the associate dean who oversees undergraduate courses in order to reach faculty who will be teaching university seminars in the upcoming semester. In an e-mail to the faculty, we describe the workshop as a way to incorporate concepts from the *Framework* in their classes to help their students gain information literacy skills and engage with course content more effectively. Once faculty have indicated their interest in participating in the workshop, we invite the corresponding subject librarians to attend. This allows time and space for collaboration between disciplinary faculty and their subject librarians.

We begin our workshops by asking participants to think about where their students typically struggle with selecting, evaluating, and using information. Faculty often describe students cherry-picking quotes from sources, engaging in patchwriting and poor paraphrasing, incorrectly or insufficiently citing other sources, and using sources that are odd matches for their paper or project. These common roadblocks may be indicators that students lack the contextual knowledge necessary to understand complex sources or are still developing their abilities to "integrate the ideas of others" successfully.[27] Indeed, insufficient summary or paraphrase may be a sign students are still learning how to engage with academic discourse or research areas with which they have little familiarity.[28] They may even prevent students from engaging with the course content as deeply as they could. By starting our workshop with this question, we generate participant buy-in from the beginning, allowing the faculty to see that the information presented will be directly applicable to their teaching and may ease some of their frustrations. Additionally, it allows participants to keep student learning and engagement at the forefront of their minds throughout the workshop. We make the case that the *Framework* describes concepts and skills that, when grasped, can help students better engage with the information they are learning in their courses. This helps them to see the *Framework* as a tool to help them work with students to prevent common roadblocks from getting in the way of deeper engagement with the course information.

After the opening question and related discussion, we introduce the *Framework for Information Literacy for Higher Education*. We provide a brief overview of the document's structure, highlighting that the six frames described in the document are a "cluster of interconnected core concepts"[29] designed to capture the complexity of information engagement and use. We also introduce the three models underlying the *Framework*: backward design, metaliteracy, and threshold concepts. This information demonstrates that the *Framework* is grounded in a larger conversation of pedagogical theory and practice.

During the next portion of the workshop, we dive into the *Framework* and its applications. We begin with the two frames that relate most to the library instruction requests that faculty tend to submit: Searching as Strategic Exploration and Information Has Value. In our experience, faculty often ask librarians to teach students how to develop search strategies (Searching as Strategic Exploration) and how to cite correctly using a specific citation style—a key component of the frame Information Has Value. Because these concepts are already generally well understood by disciplinary faculty (and are already associated with librarians), we spend less time on them during the workshop. While presenting the description of these frames to the participants, we highlight the components that are likely to be less familiar to the participants. For example, we point out that Information Has Value also addresses concepts related to the commodification of information and the ways it can be used to marginalize certain groups of people.[30]

Next, we go into more detail about the remaining four frames. These are frames that describe concepts or ideas that disciplinary faculty may not have originally thought of as information literacy concepts. Similar to the librarians at Keene State College, we chose to spend the most time on "the four frames we felt would most resonate with the challenges the faculty identified" at the beginning of our workshop.[31] Again, we start by sharing a brief overview and description of the frame. Along with this description, we include a few of the knowledge practices and dispositions associated with it. We then present the participants with a sample activity they could do with their students to help them develop the skills described in the frame. Providing concrete examples helps faculty see how they can build these activities into their courses, either as a way to scaffold a research assignment or as stand-alone activities.

For example, after presenting the frame description of Research as Inquiry, we highlight some of the key dispositions and skills and ask participants to consider how this frame might address any of the concerns about student work raised at the beginning of the workshop. One common concern that fits well with this frame is that first-year students tend to start with the argument they are going to make and then find quotes to support that argument. We ask the faculty to discuss how we can encourage students to let the evidence shape their argument, rather than shaping the evidence to fit. After participants have generated some ideas, we share a remixed version of the Inquiry Worksheet by Gina Calia-Lotz and Laura Fox of Harford Community College as one option to drive students toward inquiry.[32] Even if students are not doing library research in a particular course, they still engage deeply with assigned readings through reflective writing and classroom discussion. We propose to faculty that by assigning the Inquiry Worksheet to their students, they can begin to address some of the enduring understandings connected with Research as Inquiry. Although they would have already read and discussed the source in class, this exercise would allow them to think more deeply about it from a different vantage point and generate new questions about the topic. The Inquiry Worksheet can be assigned as a stand-alone activity to help students engage with assigned readings or can be in-

corporated as part of a scaffolded research process as students examine sources they may use in a paper.

After introducing the remaining frames following this template, we allow time for participants to brainstorm and discuss how they could apply these theories, ideas, and examples to their own courses. We once again return to the question we posed at the beginning of the workshop about the common roadblocks seen in student work, and ask participants to identify an underlying concept or skill that their students would need to develop in order to overcome that roadblock. From there, we ask them to think about the path that students might take toward improving their understanding or skills and examine how the strategies we discussed during the workshop might help them design their course syllabi or activities. In this way, we use the *Framework* as a tool to help faculty reflect on their teaching practices, identify core ideas in their courses, and scaffold a path to mastery for their students.

FEEDBACK FROM PARTICIPANTS

The feedback we have received from workshop participants has been positive. Participants report that the workshops have helped them see librarians as valuable partners in instructional design and see information literacy instruction as more than learning to search the databases. As a result, this has given us the opportunity to have deeper conversations about information literacy with faculty who had not previously thought about collaborating with the library in this way.

Additionally, faculty appreciated that the *Framework* provided them with language to describe concepts that they previously had not known what to call or had taken for granted. They recognized the benefit in making underlying assumptions about research more transparent to students. For example, the phrase "Scholarship as Conversation" has resonated with several participants as something they have been indirectly teaching but without knowing what to call it. After attending a workshop, they reported that they felt empowered to teach this idea using specific language with students, which they believed would improve student understanding of information literacy concepts and lead to deeper engagement with course content. Several participants noted that the concepts described in the *Framework* are very similar to concepts they hoped students were already learning in their courses. As a result of attending the workshop, we hope the faculty will talk about these concepts more explicitly with their students.

During the workshops, faculty have asked specific questions about scaffolding sustained research assignments so that students focus on individual skills related to finding, evaluating, and using information in smaller assignments built in along the way. Several faculty have followed up with us or with their subject librarian afterward to talk about specifics of building these activities into the syllabus for an upcoming course. Additionally, we have heard from participants several weeks or months after attending the workshop, once they have successfully been able to implement these

concepts into their own courses. In these messages, they have shared that the workshop has had a significant impact on their teaching and the way they communicate information literacy concepts to students.

STRATEGIES FOR IMPLEMENTING SIMILAR WORKSHOPS

There were several steps we took when planning the workshops that led to successful implementation. We built support starting from within our library and then moving out to the appropriate campus partners. Our first step was to write a proposal for the workshop to share with our colleagues within our library system. Because subject librarians may be invited to the workshop if their faculty register, we wanted to have their buy-in from the very beginning. In the proposal, we connected the goals and outcomes of the workshop to our organization's strategic plan, which helped us to address questions about the value of putting time and effort into this endeavor. We then reached out to the associate dean of the college that administers the first-year seminars. We described our goals for the workshop and brainstormed ways to best communicate with faculty members we wished to attend. This allowed us to target specific faculty with invitations, rather than attempting to advertise to the whole campus. The dean's office agreed to send the official workshop description and invitation, which we believe led to more faculty reading the e-mail and signing up. We followed up by sending registrants a personal e-mail confirming their registration and a calendar invitation. We suggest that others planning similar workshops take into account their own campus context and organizational goals to generate buy-in and make decisions about their desired audience.

Another important consideration was the location and timing of the workshops. We weighed the benefits of holding the workshop in one of the classrooms in the main library—bringing participants into our space—against the benefits of going out to another part of campus—meeting the faculty in a space with which they may be more familiar. Ultimately, due to library renovations, we have scheduled the workshops in other locations on campus. However, we plan to hold future workshops in one of our newly renovated spaces inside the main library. For others planning similar workshops, we recommend considering whether the location of such a workshop may have an impact on attendance within the campus community. When it comes to timing, we have had good luck in coordinating our workshops with the approval process for the following academic year, as faculty are thinking about their upcoming courses but are not yet rushed for time in planning them.

We have built off the success of these workshops by presenting a modified version to a broader campus audience. In the initial workshop offerings, we focused on a small audience—that of faculty scheduled to teach a writing-intensive first-year seminar. Because the College of Arts and Letters offers most of these seminars, we knew the workshop invitation would not reach faculty from disciplines in other colleges. However, after receiving positive feedback from participants in the initial

workshops, we pitched the idea for a similar workshop designed for faculty and graduate student instructors from all disciplines to our campus center for teaching and learning. In these discussions, we had to modify the goals of our workshop slightly to better fit with that of the existing workshop series and a broader audience. However, these modified workshops still introduce participants to information literacy more broadly and the *Framework* more specifically. Our first such workshop as part of this collaboration quickly filled to capacity on the registration portal, demonstrating the interest that instructors across campus have in information literacy. If adapting this workshop for a different audience, we recommend focusing on either a narrow audience (such as the faculty in a particular discipline or those teaching a required course) or a general audience (such as any instructor on campus) and targeting the format and content to that audience. It may be useful to seek out partnerships with campus centers that have established professional development programs and a wide audience, though the workshop may need to be adjusted to fit within their existing series.

CONCLUSION

The *Framework* is a powerful tool to assist faculty in designing assignments and activities that bring information literacy concepts to the surface in their courses. We have found that inviting faculty to a workshop focused on the *Framework* has been successful in a number of ways. The faculty who attend have commented that the *Framework* provides them with language to name concepts that were often implicit in their course assignments, content, and structure. They feel empowered to teach these concepts more explicitly using language in the document. Further, participants have noted that they have a broader understanding of information literacy because of the workshop. Finally, the workshop has opened the door to new collaborations with the faculty who attend, leading to relationships with librarians that go beyond the one-shot instruction session. While developing workshop content and managing logistics can be a lot of work up front, the payoff is great. Consistent with what others have found and documented in the literature, librarian-led workshops for faculty have the potential to transform the way faculty teach, allowing information literacy concepts to be incorporated into their curriculum in a more meaningful way.

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3

Are They There Yet? Determining Student Mastery of Learning Outcomes Based on the ACRL *Framework*

Holly Hendrigan, Keshav Mukunda, and Diana Cukierman

The Association of College and Research Libraries (ACRL) made a fundamental change in the library instruction landscape when it replaced the *Information Literacy Competency Standards for Higher Education*[1] with the *Framework for Information Literacy for Higher Education*[2] in 2016. They developed the *Framework* in response to an ever-changing information ecosystem in which our ability to make informed choices relies less on following prescribed rules and more on understanding big ideas that underpin the foundational concepts of information literacy. Information literacy is now recognized as a collection of interconnected abilities that place the self-reflective and critical learner within an information community able to recognize how information is created and evaluated and understand how new knowledge is built through conversation and participation within that community. In addition to the move to big ideas, the ACRL underpins the *Framework* with Jan H. F. Meyer and Ray Land's theory of threshold concepts.[3] Mastering a threshold concept "can be considered as akin to a portal, opening up a new and previously inaccessible way of thinking about something. It represents a transformed way of understanding, or interpreting, or viewing something without which the learner cannot progress."[4]

Threshold concepts are generally specific to a given disciplinary community and have meaning in the context of that community. Accordingly, the *Framework* identifies several abilities that constitute information literacy and deems them *knowledge practices* and *dispositions* to describe these threshold concepts. However, librarians who adopted the *Framework* have been left wondering how to determine whether students have crossed through this knowledge portal or remain in what Meyer and Land call a transitional "liminal space" where learners have not yet mastered a difficult concept.[5]

Librarians are divided on whether the theoretically abstract nature of the *Framework* is useful in the classroom. Some have criticized the ACRL for its lack of

support in the transition from the *Standards* to the *Framework*.[6] In disciplines such as business, uptake is slow; LuMarie Guth and Dianna E. Sachs, for instance, report that 61 percent of librarians for these departments do not incorporate the *Framework* into instruction.[7] However, many other librarians believe that adopting the *Framework* was a good decision, and offer recommendations for understanding and implementing some of its core concepts.[8] Julia Bauder and Catherine Rod provide some guidance on teaching the frames in collaboration with course-specific goals, and Julie Edwards developed the one-credit online course Information Analysis in the Post-Truth Age, informed by the *Framework*, particularly the frame Authority Is Constructed and Contextual.[9]

While the ACRL has created a website that allows librarians to share their pedagogical resources on teaching the *Framework*,[10] literature is scarce on understanding what students have learned after receiving *Framework*-based information literacy instruction. Work on assessment methods has begun; for example, Rachel Scott shares extant student reflections on *Framework* concepts, then measures how they improved their understanding over the course of a term.[11] Generally speaking, we agree with Guth and Sachs, who report a lack of proven methods in implementing the *Framework*,[12] and much needs to be done to develop processes to assess students' mastery of the frames.

We believe wholeheartedly in the *Framework*'s potential but realized the gap in assessment resources when we included it as part of the curriculum of a third-year computing science course. This chapter provides an account of our attempt to discover whether students had mastered some of the *Framework*'s knowledge practices and dispositions. We developed and applied an assessment methodology to two frames: Authority Is Constructed and Contextual and Scholarship as Conversation. We used a mixed-methods approach to determine whether students met the assignment's learning objectives.[13] This first involved a qualitative analysis of student responses in light of the frames' knowledge practices and dispositions. We then grouped the knowledge practices and dispositions into learning outcomes and tallied the occurrences. We discovered that students had a good grasp of the major markers of authority, but some had difficulties with the nuance of specialization and the concept of scholarship being cumulative rather than fixed. This process is a step forward in assessing mastery of learning outcomes based on the *Framework*, though it falls short of being able to answer definitively whether students have crossed a threshold.

BACKGROUND

In 2017 Diana Cukierman, a computing science lecturer at Simon Fraser University (SFU), began developing a curriculum for a third-year course titled Social Implications of a Computerized Society. The course expects students to reflect on societal issues that are influenced by the extensive and intensive usage of technology, com-

puters, and networked communications. She contacted Holly Hendrigan, departmental librarian for computing science, to brainstorm ideas for a guest lecture and assignment on information literacy. Cukierman was open to hearing Hendrigan's ideas that related to themes she was teaching in the course; she was also amenable to codeveloping an assignment and allowing Hendrigan access to student responses. Hendrigan and Cukierman were excited at the prospect of collecting data on students' understanding of the frames. The team expanded to include Keshav Mukunda, a colleague of Hendrigan's at SFU Library, in the fall of 2017.

The research team developed the course unit on information literacy months in advance of the workshop, scheduled in May 2018. We decided to focus on two frames—Authority Is Constructed and Contextual and Scholarship as Conversation—and secured approval from SFU's Research Ethics Board to ensure we could report widely on our findings. The course unit included several different components over the span of five weeks within a thirteen-week course. In week three, we asked students to read Jean Twenge's article "Have Smartphones Destroyed a Generation?"[14] in the *Atlantic*. A written assignment due two weeks later required students to answer questions relating to Twenge's authority and to find scholarly responses to the article that both supported and disagreed with her findings and/or methodologies (the complete assignment is provided in the appendix). In week four, as students were working on this assignment, Hendrigan provided an in-class lecture discussing the two frames.

Librarians using the *Framework* have flexibility in designing their curricular materials and methods of assessment. We followed the advice of Alison Hosier and Megan Oakleaf, who recommend the creation of learning outcomes.[15] Our decision came after failed attempts to develop a sound methodology to assess the transformative nature of mastering threshold concepts. For this assignment, we wanted students to be attuned to an academic's professional qualifications, but also to realize that no author's authority is absolute and no one article is the final word on a topic. We developed three learning outcomes:

1. The student will recognize markers and/or types of authority.
2. The student will challenge the author, or acknowledge debate on the topic, or mention the importance of skepticism.
3. The student will recognize that a scholarly work is just one perspective on a topic.

We also followed Oakleaf's requirement that students represent their knowledge by taking a declarative approach, and Scott's lead in explicitly teaching the *Framework* rather than modifying the language of the frames into simpler concepts.[16]

As the class was relatively large (eighty-six students), the responses needed to be in digital format to enable analysis. Students submitted the assignment on SFU's internal secure survey platform, which allowed us to download the responses into a spreadsheet. This chapter analyzes the results of four out of eighteen questions from

the assignment; these four questions provided the best sources of qualitative data for analysis. Specifically, they were:

- Q9. What are Twenge's credentials as an expert on the impact of smartphones on young people? Briefly explain in 1–2 sentences.
- Q10. Do you think that Twenge is a credible expert on the impact of smartphones on young people? Why? Briefly explain in 1–2 sentences.
- Q11. In your view, what are the characteristics of a credible expert on the impact of smartphones on young people? Briefly explain in 1–2 sentences.
- Q18. Write a reflective paragraph on what you learned from this assignment about the Frame "Authority is constructed and contextual."

Sixty-seven of eighty-six students consented to share their responses to be analyzed for this research. They had completed an average of 5.25 semesters of postsecondary studies, although there was a wide range of semesters completed (from 4 to 8); some students, for example, were in their last semester before graduating. The majority of students in the class (58 percent) were computing science majors, but other majors included communications and interactive arts, and some had also declared a minor in disciplines such as psychology and business.

CODING AND ASSESSMENT

We used a mixed-methods approach in developing an assessment rubric for the assignment. One aspect involved qualitative analysis of the student responses; the other aspect involved quantifying the level of knowledge acquired using mastered learning outcomes as a measure. By design, the *Framework* does not prescribe how it should be implemented or how to assess student understanding of the concepts it describes. In analyzing the responses to the questions, we maintained the *Framework*'s emphasis on knowledge practices and dispositions, creating codes to reflect these attributes. These codes did not encompass *every* knowledge practice and disposition from the two frames we discussed; we followed Oakleaf and Hosier's suggestions to focus on the few that were relevant to our desired learning outcomes.[17] Table 3.1 displays the codes we used in analyzing student responses, along with contextual information from the *Framework* document.

Table 3.2 provides excerpts from the student responses that reflect the codes we applied. To ensure coding consistency, we used an approach from Peter Davies and Jean Mangan's work on assessing mastery of threshold concepts in economics.[18] Two members of our research team initially coded twelve samples independently, and then compared the coding assignments in order to ensure consistent labels. The percent agreement for each of the individual codes varied from 63 percent to 100 percent, with a median of about 92 percent.

Table 3.1. Knowledge Practices and Dispositions with Associated Codes

Frame: Authority Is Constructed and Contextual		
Attribute	*Brief excerpt from Framework definition*	*Code*
Challenge acknowledged authorities	"disciplines have acknowledged authorities . . . yet . . . some scholars would challenge [their] authority"	acc_kp1
Indicators of authority	"use . . . indicators of authority to determine the credibility of sources"	acc_kp2
Types of authority	"define different types of authority . . ."	acc_kp3
Open mind	"develop and maintain an open mind . . ."	acc_d1
Self-aware	"[assess] content . . . with a self-awareness of their own biases and worldview"	acc_d2
Skeptical	"[assess] content with a skeptical stance"	acc_d3
Frame: Scholarship as Conversation		
Attribute	*Brief excerpt from Framework definition*	*Code*
Evaluate contributions	"critically evaluate contributions made by others . . . "	sc_kp1
Scholarly work one perspective	"recognize that a given scholarly work may not represent the only . . . perspective"	sc_kp2
Ongoing conversation	"recognize they are often entering . . . an ongoing scholarly conversation"	sc_d1

The quantitative aspect of this mixed-methods approach was more straightforward. After coding students' responses for relevant knowledge practices and dispositions following table 3.1, we grouped the knowledge practices and dispositions into broader learning outcomes, as in table 3.3.

Unexpectedly, analyzing and coding the responses helped us determine our final learning outcomes. Our initial learning outcomes required that students demonstrate an understanding of the major markers of authority, that all authors can be challenged, and that no single resource represents an absolute truth. Another attribute emerged from question 18 that we did not expect: we labeled it "self-aware" and coded it as acc_d2. This attribute could not be grouped with similar knowledge practices and dispositions that we had already incorporated into learning outcomes. We subsequently added the learning outcome lo4, which represented evidence of metacognition.

Developing the coding framework was not an easy task; there are no published accounts of similar *Framework* assessment schema that we could consult or adapt to our purposes. Coding qualitative data is time consuming, even though the assignment responses were generally short. Ultimately, we realized our data does not definitely determine whether or not students had crossed a portal of understanding

Table 3.2. Examples of Coding Applications

Code	*Attribute*	*Excerpt from student responses*
acc_kp1	Challenge acknowledged authorities	"[T]here are obviously people with other opinions that disagree with her."
acc_kp2	Indicators of authority	"She is [a] professor in Psychology and has published several peer reviewed articles."
acc_kp3	Types of authority	"She also speaks from experience because she has 3 daughters, all of which [*sic*] were born in the iGen generation and hence have been growing up with technology."
acc_d1	Open mind	"Information and the truth are not always easily found and it is important to consider that an article may only represent the findings of a specific experiment or one possible conclusion. The takeaway is that open-mindedness is an essential virtue in the pursuit of knowledge."
acc_d2	Self-aware	"Much of the time, I am guilty of believing the first thing that I read without asking whether that information is trustworthy, what biases the author might hold, etc."
acc_d3	Skeptical	"However, her study should not be a single source of truth, and rather it should be just another source of study. . . ."
sc_kp1	Evaluate contributions	"It is best to examine different authorities for the same topic to form better understanding of the controversies and examine the information as the reader."
sc_kp2	Scholarly work one perspective	"I would add the caveat that while she is an expert, if you are really looking for the complete picture on a topic it is wise to look at additional sources as well."
sc_d1	Ongoing conversation	"Results are always changing too so one day the research by the authoritative person could be the absolute truth but the following day someone an all of a sudden disprove it with stronger research."

and had emerged through to the other side of a threshold concept. In time, we trust that such a metric will be developed and tested.

FINDINGS

In analyzing student responses to assignment questions, we first looked for evidence of knowledge practices and dispositions on display in students' answers. This pro-

Table 3.3. Learning Outcomes in Relation to Knowledge Practices and Dispositions

Learning outcome code	*Description*	*Codes in evidence*
lo1	Student recognizes markers and/or types of authority	acc_kp2 OR acc_kp3
lo2	Student challenges author, or acknowledges debate on the topic, or mentions the importance of skepticism	acc_kp1 OR acc_d3
lo3	Student recognizes that a scholarly work is just one perspective on a topic	sc_kp2 OR sc_kp1 OR sc_d1 OR acc_d1
lo4	Student demonstrates metacognition in their own search behavior	acc_d2
mlo	Misunderstood learning outcome, or category error	—

vided a deeper understanding of the variation across students' acquisition of different *Framework* concepts and made it straightforward later to assign acquired learning outcomes to each student.

In general, the knowledge practices and dispositions that appeared most often in student responses and for the largest number of students were from the frame Authority Is Constructed and Contextual, while fewer students demonstrated competencies from the frame Scholarship as Conversation. Table 3.4 shows the occurrences of these competencies for both the frames in students' answers to assignment questions 9–11 and question 18. Responses to question 9 through question 11 were combined for the purposes of our analysis, as they were all related to the characteristics of a person who could be an expert on the impact of smartphones on young people (appendix 3.1).

Turning to the learning outcomes described in table 3.3, 94 percent of the sixty-seven students were able to recognize markers and/or types of authority, while only 18 percent demonstrated metacognition (table 3.5).

We also noticed that some students had not generally understood fundamental concepts that formed the basis of certain questions. In these fourteen instances, we coded the responses as MLO, or "misunderstood learning outcomes." However, we had enough data from the responses to recognize that most students assigned an MLO did also acquire other learning outcomes.

For example, we noticed misunderstandings of the phrase "Authority Is Constructed and Contextual" and of the concept of bias: "From this assignment I learned that the Frame 'Authority Is Constructed and Contextual' means we must look at the credentials of the author. For instance, if the person doesn't have any credentials, then their research and opinions may be biased or inaccurate" (Student 65). The suggestion here is that authors whose research is not biased must already have relevant credentials, which missed the nuance of our learning objectives. However, Student

Table 3.4. Occurrences of Codes in the Assignment Questions

Code	*Attribute*	*Q9–Q11 combined*	*Q18*	*Total occurrences*	*Number of students*	*Percentage of students*
acc_kp2	Indicators of authority	63	31	94	64	96
acc_d3	Skeptical	13	33	46	38	57
acc_kp1	Challenge acknowledged authorities	20	13	33	28	42
sc_kp1	Evaluate contributions	5	14	19	16	24
acc_kp3	Types of authority	10	5	15	14	21
acc_d2	Self-aware	0	12	12	12	18
sc_kp2	Scholarly work one perspective	6	6	12	10	15
sc_d1	Ongoing conversation	2	9	11	10	14
acc_d1	Open mind	2	6	8	7	10

Table 3.5. Learning Outcomes Acquired

Learning outcomes	*Number of students*	*Percentage of students*
lo1: Student recognizes markers and/or types of authority	63	94
lo2: Student challenges author, or acknowledges debate on the topic, or mentions the importance of skepticism	47	70
lo3: Student recognizes that a scholarly work is just one perspective on a topic	25	37
lo4: Student demonstrates metacognition in their own search behavior	12	18

65 had achieved lo1 and lo2, exhibiting knowledge of the author's markers and types of authority, and mentioned the importance of scrutinizing the author's field of expertise. In another example, a student applies the term *contextual* to the topic rather than the situation of the author: "Her work is also contextual as it addresses a need to recognize the adverse effects that our everchanging technological society is having on teens now and could have in the future" (Student 26).

DISCUSSION

The purpose of this research was to develop a methodology for assessing two frames and to gauge students' understanding of these concepts. We developed an assessment schema based explicitly on the *Framework*'s knowledge practices and dispositions and then applied this schema to student responses. Here we reflect on four themes that emerged from our analysis.

Students Demonstrate Proficiency in Types and Indicators of Authority, but Fewer Challenge Authority and Understand Scholarship as Conversation

Nearly all the students revealed proficiency in recognizing the markers of the author's academic and experiential authority: She is a university professor and author of hundreds of peer-reviewed articles, and also a parent witnessing the impact of smartphones on her two teenage daughters.[19] In response to question 9, many students provided responses similar to this one: "Her findings about the impact of smartphones are mostly published by reliable authorities such as the American Psychological Association. In addition, she has more than 100 scientific publications" (Student 64).

We had wondered, however, how many students would also notice that Twenge's primary research area was on generational differences rather than the impacts of technology on its users. The frame Authority is Constructed and Contextual explicitly mentions that experts "recognize schools of thought or discipline-specific

paradigms."[20] As the assignment required students to find dissenting views on Twenge's conclusions within academic discourse (see Q17 in appendix 1.3.1), we expected this activity to stimulate some critical reflections on the limitations of her authority. Some students noted this—"I believe that Twenge is a credible expert on the attitudes/values/personalities/habits of this young generation (iGen) but not specifically on the impact of smartphones on said generation" (Student 1)—but our findings indicate that more than half of the students have yet to understand this distinction. One student response illustrates this conflation: "Twenge is a credible expert on the impact of smartphones on young people since she has been studying generational differences for more than two decades" (Student 3).

Being able to recognize identifiers of authority generally did not mean students could also challenge the author's authority or acknowledge challenges made by other scholars. We confirmed Edwards's finding that some students confuse the authority of the author with the content of their argument.[21] One student response illustrates this point: "Yes I do think she is [a] credible expert. . . . [T]he points she brought up are convincing plus they are peer reviewed. Smartphones (or screen activities) can cause depression [i]n people" (Student 57). This indicates an inability to acknowledge that a person who has expertise and authority might be wrong or hold opinions different from the students'.

Some of the weaknesses in meeting the learning objectives might be attributed to disciplinary conventions in computing science and variances in the number of semesters that students have been in university. Unlike typical assignments in computing science courses, our assignment asked students to examine the nuances of authority and the cumulative nature of scholarship. While computing science students are required to take courses outside their discipline, this assignment (indeed, this entire course) is a departure from the type of work they are normally assigned and are presumably more comfortable completing. We wonder how responses from students majoring in a social sciences or humanities discipline might differ.

Qualitative Data Informs Learning Outcomes

We asked open-ended questions because we were genuinely curious to read, in students' own words, their understanding of the two frames we focused on. However, open-ended questions present challenges for researchers to code and analyze. We do our best to structure and classify qualitative data by creating rubrics and other systems of sensemaking, but surprises will still appear. As mentioned earlier, we found enough evidence of metacognition in student responses that we felt compelled to include it as a learning outcome, even though we did not specifically ask questions that tested for it. Thus, the relatively low attainment of the learning outcome that measured metacognition (18 percent) may not reflect students' weakness in this attribute. Instead, it represents a significant but unexpected finding after we collected the data. We will ask explicit questions in future assignments regarding students'

propensity for metacognition, but we acknowledge a need for a flexible approach to assessment when working with open-ended questions.

Misunderstood Learning Outcomes and Nonnative Speakers of English

We attribute some of the misunderstood learning outcomes to challenges with the English language. While we do not have data on the percentage of students in the class for whom English is an additional language, the figure for all international students in the Faculty of Applied Science is just over 27 percent.[22] The vast majority of SFU's international students are visiting from China, followed by India, Hong Kong, and Korea,[23] where English is not the dominant language. Many responses revealed grammar and usage errors common to nonnative English speakers, and, as mentioned in our findings, students struggled with the meaning of the phrase "Authority Is Constructed and Contextual." These were similar to the challenges some of Scott's students had with the complex language of the frames.[24] Understanding this clause requires high proficiency in the English language, which indicates that responses to question 18 might not fully reflect students' grasp of threshold concepts in information literacy.

Rewarding Work, but Unsustainable

While we have focused on discussing the challenges students had in achieving the learning outcomes, the research team has much to celebrate as well. We saw signs of honest reflection and intellectual growth: for example, "From this assignment, I learned there are lots of different ways to construct, or build, authority and how it relates to information. However, it is still hard for me to find 'good' sources or choose the 'right' data to use when I write about something" (Student 17). And:

> [R]esearch is really more of an ongoing discussion then finding any one singular truth. For example, the article that I found disagreeing with Twenge discusses how we may not really be addicted to technology, but its increased use is a symptom of larger problems. These authors suggest that technology could, in fact, be used to form meaningful relationships. I think that the debate between these authors is great to read as it helps expose weaker points in the research on both sides. (Student 29)

Practicing librarians rarely have access to this level and depth of reflection.

However, where Oakleaf recommends that librarians promptly provide feedback to students on their grasp of the *Framework*'s concepts, in this first iteration of our module we were unable to provide students with a timely response. As mentioned earlier, we were working with a large class, and developing the codes and assessing the responses took weeks of work amid other duties. While the research team agrees with Oakleaf that a declarative approach is the best method to demonstrate understanding, this method is not scalable to practitioner librarians teaching large

classes. Challenges remain to develop instruction in the *Framework* that allows for assessment for large classes.

CONCLUSION

This chapter extends the research of Scott, Edwards, and Hosier in offering suggestions to implement the *Framework* in the university classroom. We provide a coding system based on the *Framework*'s knowledge practices and dispositions and reveal our assessment data on the assignment's learning outcomes. This approach might be tailored to other course-integrated information literacy instruction settings.

We realize, however, that research to this level and depth on implementing the *Framework* requires a special set of circumstances. In order for it to happen, practitioner librarians need to have a close collaborative relationship with faculty. It can be difficult to persuade instructors to move beyond a fifty-minute one-shot workshop on teaching resources and search strategies for a research paper. For those of us who do not regularly conduct qualitative assessment of student learning, we are now aware of the extent of the labor required to provide meaningful feedback for such assignments. We need to work with faculty to develop scalable assessment methods.

This research has provided us with many ideas on future areas to be addressed. We would like to fine-tune the assignment and the workshop: we will spend more time defining the terms *authority*, *contextual*, and *constructed*. We could spend more time examining the data from the questions we did not analyze for this chapter and look for patterns and associations in the learning outcomes achieved. Cross-referencing the achieved learning outcomes with student demographic data (including the number of semesters completed and their academic major) would also be an interesting analysis. Indeed, we have a lot of work to do in order to answer the question, "Are they there yet?" and further examine the reasons why students might be stuck in a liminal space. This is but one method for determining where students are in their information literacy journey, and future studies will provide us with many more pathways to choose.

APPENDIX 3.1. ASSIGNMENT QUESTIONS

Q1. Read Jean Twenge's article "Have Smartphones Destroyed a Generation?" (https://www.theatlantic.com/magazine/archive/2017/09/has-the-smartphone-destroyed-a-generation/534198/). Twenge's article in *The Atlantic* magazine describes some of the same ideas from her recent book, *iGen: Why Today's Super-Connected Kids Are Growing Up Less Rebellious, More Tolerant, Less Happy—And Completely Unprepared for Adulthood.*

Q2. Do you consent to share your answers with the research team for research purposes?

Q3. Dr. Jean Twenge is a faculty member of which academic department?
Q4. In the PsycINFO database, do an author search for Jean Twenge. Narrow the list of search results to academic journals, and list the first three of her articles using the APA citation style. Remember to keep your search page open for the questions that follow!
Q5. Were the articles that you selected for the previous question published in peer-reviewed journals?
[Multiple choice: Yes all three of them; Not all of them; None of the three; I am not sure]
Q6. What does "peer review" mean? Explain in your own words, in 1–2 sentences.
Q7. Scan the titles and abstracts from the first page of the list of author search results in PsycINFO. Summarize two or three major topics or themes of Twenge's academic articles.
Q8. Does Twenge appear to be authoritative within the academy (i.e., among other university professors)? How do you know this? Briefly explain in 1–2 sentences.
Q9. What are Twenge's credentials as an expert on the impact of smartphones on young people? Briefly explain in 1–2 sentences.
Q10. Do you think that Twenge is a credible expert on the impact of smartphones on young people? Why? Briefly explain in 1–2 sentences.
Q11. In your view, what are the characteristics of a credible expert on the impact of smartphones on young people? Briefly explain in 1–2 sentences.
Q12. Who is Twenge's audience in her academic papers?
Q13. Who is Twenge's audience in her article in *The Atlantic* magazine?
Q14. How do you think Twenge establishes her authority in *The Atlantic* article? Briefly explain in 1–2 sentences.
Q15. Why do you think Twenge chose to publish her ideas on smartphones and young people in both *The Atlantic* magazine and in peer-reviewed journals? Briefly explain in 1–2 sentences.
Q16. Find an article written by a university professor who builds on Twenge's findings and/or methodologies about the "iGen" generation. Cite the article in APA style. (Note: Twenge's article in *The Atlantic* magazine describes some of the same ideas from her recent book *iGen: Why Today's Super-Connected Kids Are Growing Up Less Rebellious, More Tolerant, Less Happy—And Completely Unprepared for Adulthood*)
Q17. Find an article written by a university professor who disagrees with Twenge's findings and/or methodologies about the "iGen" generation. Cite the article in APA style.
Q18. Write a reflective paragraph on what you learned from this assignment about the Frame "Authority is constructed and contextual."

NOTES

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4. Ibid., 1.

5. Ibid., 13.

6. Christine Bombaro, "The Framework Is Elitist," *Reference Services Review* 44, no. 4 (2016): 552–63, https://doi.org/10.1108/RSR-08-2016-0052; Meredith G. Farkas, "Is the Framework Elitist? Is ACRL?" in *Information Wants to Be Free*, October 18, 2016, https://meredith.wolfwater.com/wordpress/2016/10/18/is-the-Framework-elitist-is-acrl/; Leslin H. Charles, "Embracing Challenges in Times of Change: A Survey of the Readiness of Academic Librarians in New Jersey for Transition to the ACRL Framework," *Communications in Information Literacy* 11, no. 1 (2017): 221–45, http://www.comminfolit.org/index.php?journal=cil&page=article&op=view&path%5B%5D=v11i1p221.

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15. Hosier, "Creating Learning Outcomes," 4; Oakleaf, "Roadmap," 511–12.

16. Oakleaf, "Roadmap," 512; Scott, "Part 1. If We Frame It."

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21. Edwards, "Added Value," 291.

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4

Finding Expertise in Your Own Backyard: Creating Communities of Practice to Support Learning about the *Framework*

Kim Pittman, Amy Mars, and Trent Brager

This chapter will focus on successful strategies for creating ongoing professional development opportunities and building communities of practice around the Association of College and Research Libraries' (ACRL) *Framework for Information Literacy for Higher Education*.[1] Drawing on the authors' experiences developing free and low-cost opportunities for *Framework*-related professional development as former cochairs of the Minnesota Library Association (MLA) Instruction Round Table (IRT), our case study will demonstrate that many barriers to *Framework*-related professional development can be overcome by leveraging expertise from communities of practice and taking a user-centered approach to design. Using the 23 Framework Things[2] program and interviews with program participants, we will highlight how the design and content of *Framework*-related professional development can draw on the learning theories that inform the *Framework* itself, be accessible to a wide range of audiences and local contexts by employing a flexible structure, and provide a forum for librarians engaging in collaborative learning.

PROBLEM/CONTEXT

In the years since the ACRL's initial rollout of the *Framework* in 2015, librarians nationwide have identified challenges and called for more support in implementing the *Framework*. Following the ACRL's rescinding of the *Information Literacy Competency Standards for Higher Education*[3] and formal adoption of the *Framework* in January 2016, a small number of studies have explored the extent to which instruction librarians have incorporated the new document into their teaching practice. Leslin H. Charles conducted a survey of New Jersey academic librarians before the *Standard*s were rescinded, asking participants to report on their institution's progress

in implementing the *Framework*. While 28 percent of respondents were "waiting for more examples from ACRL regarding how to integrate the *Framework*," 50 percent of respondents were beginning to implement the *Framework* with library colleagues and 22 percent were working with faculty to apply the *Framework*.[4] In a 2016 survey of instruction librarians in the United States conducted by Heidi Julien, Melissa Gross, and Don Latham, 41 percent of respondents indicated that the *Framework* "had no influence or only a minor influence" on their approach to instruction, while 31 percent reported a "significant influence."[5] Stephanie J. Schulte and Maureen Knapp's 2016 survey of health sciences librarians indicated a low rate of adoption among teaching librarians within their disciplines: 11 percent had incorporated the *Framework* into their teaching practice, while 45 percent anticipated implementing it in the near future. A majority of participants, 54 percent, had not implemented the *Framework* and did not expect to do so.[6] In 2015, LuMarie Guth and Dianna E. Sachs completed a survey exploring rates of *Framework* adoption among business librarians, comparing those rates to a similar study conducted shortly after the creation of the *Standards*. This study revealed that nine months after ACRL filed the *Framework*, 39 percent of business librarians "had incorporated or were in the process of incorporating the *Framework* into instruction."[7] While these studies provide an incomplete picture of *Framework* adoption and implementation, they do highlight the challenging nature of the transition from *Standards* to *Framework*.

The literature also reveals common barriers librarians encounter when engaging with the *Framewor*k. In 2017 Latham, Gross, and Julien conducted semistructured interviews with fifteen librarians about their experiences with the *Framework*.[8] Participants identified time; resistance from other librarians, faculty, and administration; and aligning assessment methods to *Framework* concepts as significant challenges in implementing the *Framework*. The authors extrapolate on the same study in a separate article, highlighting underlying sources of resistance to the *Framework*, including the workload involved in adoption as well as "concerns about it being too conceptual, elitist, and not appropriate for every audience."[9] Interviewees also expressed a sense of isolation, describing a lack of awareness of how the *Framewor*k is being implemented by colleagues and frustration caused by colleagues' unwillingness to discuss or apply the *Framework* collaboratively. Additionally, participants discussed the challenges involved in building the collaborative relationships with faculty that are necessary to make information literacy a campus-wide priority.

As cochairs of the IRT, we saw these same struggles and calls for support mirrored at the local level among both teaching librarians and directors. IRT is a statewide forum for Minnesota instruction librarians to share ideas, resources, and best practices. With approximately ninety-seven members statewide, IRT supports librarians who teach by holding workshops, social events, and annual business meetings. In October 2016 the IRT cochairs were invited to offer a workshop about the *Framework* at the Council of Academic Library Directors (CALD), an annual gathering of Minnesota's academic library directors. In addition to providing an overview of the *Framework*'s structure and purpose, as well as sharing examples of the *Framework* in practice, we

facilitated small-group discussions about each institution's progress toward implementing the *Framework*. Concerns expressed in these conversations echoed many of the challenges described in the literature, including limited time and capacity for librarians to work with and learn about the *Framework*, lack of support from faculty, librarian resistance to change, concerns about meeting accreditation requirements, and the challenges of shifting to a conceptual and flexible approach from the more concrete nature of the *Standards*.

Communicating with instruction librarians from around the state further amplified the need for support. Just prior to the CALD workshop, we held our annual IRT business meeting at the 2016 Minnesota Library Association Conference. In this meeting, our members identified learning to implement the *Framework* as a top priority for IRT-sponsored professional development in the 2016–2017 academic year. Members articulated specific concerns about the language of the document and challenges of using it to inform student learning assessment efforts. Discussing these obstacles with teaching librarians and directors motivated us to take action and create additional resources and professional development opportunities for teaching librarians within our state. At this meeting, we also elected a new IRT cochair, who collaborated with the two previous cochairs on all subsequent *Framework*-related professional development projects.

Following the CALD workshop and IRT business meeting, we began to discuss how we could best respond to this clearly expressed need. Our initial impulse was to bring in a nationally known expert to guide our state's teaching librarians. While this would have been a simple solution, we were dissuaded both by the potential cost and by our belief that teaching librarians in Minnesota were already engaging with the *Framework* in effective ways. We opted to draw on the expertise of librarians in our community rather than outside speakers, an approach that made professional development more affordable for and accessible to the local community. Our strategy of highlighting regional expertise also aligned with the *Framework*'s emphasis on local context for implementation. As a first step toward supporting Minnesota librarians in implementing the *Framework*, we partnered with librarians from a variety of academic libraries in Minnesota to create a half-day workshop called Let's Build Together: Minnesota Librarians Implementing the ACRL Information Literacy Framework. In this workshop, librarians from a variety of academic institutions each presented on an aspect of the *Framework* with which they had expertise. Presenters covered a wide range of topics, including creating an information literacy road map at your institution, writing lesson plans and student learning outcomes, performing outreach to faculty, assessing affective components of learning, and using rubrics with the *Framework*. The workshop demonstrated that each librarian was drawing from a unique context and that by coming together to share, we were able to address many of the commonly identified barriers to engaging with the *Framework* without a significant investment of money or time.

In addition to the workshop, we knew that we needed to support deeper learning by providing additional opportunities for long-term engagement with the *Frame-*

work. Because time had emerged as a key barrier to *Framework* implementation, we wanted to create a flexible, self-paced professional development resource that would be accessible regardless of location, financial means, or previous experience with the *Framework*. With these considerations in mind, we decided to adapt the 23 Things model of professional development, first developed by Helene Blowers to help Charlotte Mecklenburg Library staff members learn about Web 2.0.[10] By providing twenty-three prompts that invite participants to explore a broad topic in an online environment and offering incentives for participation, this model encourages ongoing collaborative learning. The 23 Things model has been used for a variety of audiences and purposes, including a program coordinated by Metronet, a multitype library network in Minnesota, called 23 Mobile Things, which challenged participants to complete twenty-three online activities related to mobile technology.[11] One IRT cochair had previously participated in this program, and this prior experience with the 23 Things model inspired us to apply it to learning about the *Framework*.

SOLUTION

The structure and content of 23 Framework Things was developed based on the theories that inform the *Framework*, themes from the literature, and our experiences delivering *Framework*-related in-person professional development. The feedback we gleaned from our local community and patterns from the literature enabled us to take a user-centered approach to designing 23 Framework Things. At the outset, we focused our energy on designing a program to alleviate frequently cited barriers and address "stuck places" commonly experienced by newcomers to the *Framework*. As we began to promote the program on listservs, librarians from beyond Minnesota asked if it could be made available outside the state. Based on this interest, we opened participation to any interested person regardless of location.

Each of the 23 Things addresses a different aspect of the *Framework*, including metacognition, social justice, pedagogy, outreach/marketing, and assessment, among others. Each Thing includes *Framework*-related resources such as readings, videos, or examples of the *Framework* in practice. Participants are asked to respond to the resources provided by writing a reflection or discussion post, creating or adapting a lesson plan, or identifying stakeholders or partners to apply what they have learned to their specific teaching role and/or institutional context. In addition to communicating via comments, the program also makes use of Flipgrid, a free online tool that allows participants to post video responses.[12] To add structure and cohesiveness to the program, we organized topics into four tracks: Assessment, At Your Institution, Frame Focus, and Pedagogy. Each of these tracks includes prompts designed to help librarians overcome common barriers to *Framework* implementation.

Theory and Practice

In the introduction to the *Framework* and supporting literature, metaliteracy, threshold concepts, and Understanding by Design are referenced as having significantly informed the *Framework*'s design and the approach to information literacy it advocates.[13] These three concepts represent some of the areas where the *Framework* is a significant departure from the *Standards.* Because of this, we incorporated these conceptual understandings into not only the content but the design of 23 Framework Things. As we were selecting topics to include among the 23 Things, we reflected on our own "threshold moments" when we were learning about the *Framework*. Jan Meyer and Ray Land define threshold concepts as

> akin to a portal, opening up a new and previously inaccessible way of thinking about something. It represents a transformed way of understanding, or interpreting, or viewing something without which the learner cannot progress. As a consequence of comprehending a threshold concept there may be a transformed internal view of subject matter, subject landscape, or even worldview.[14]

We narrowed our long list of potential Things by focusing on obstacles to understanding and concepts that aligned with our own experience and the literature (Thing #2: Threshold Concepts, Thing #13: Understanding by Design, Thing #19: Metacognition, Thing #23: Assessing Dispositions, the Frame Focus track, etc.). Though we may not have been fully aware of it at the time, by focusing the conceptual understandings that we wanted participants to walk away with after participating in 23 Framework Things, we were employing a model akin to Grant Wiggins and Jay McTighe's "backward design" approach.[15]

The *Framework*, influenced heavily by Thomas P. Mackey and Trudi E. Jacobson's research on metaliteracy, also emphasizes metacognition and affective learning.[16] For this reason, we designed our prompts to include opportunities for participants to reflect on their feelings about and experiences with the *Framework* and *Standards*. As one participant noted,

> The Things were great because they made me dig deep into my own thinking and reflect upon why I was responding in this way or that way about a Frame or something in relation to one of the Frames. Basically, 23 Framework Things was a massive exercise in metacognition for those of us who need to help our students understand their own metacognitive processes.[17]

By designing each Thing with a reading to promote deep thinking and a prompt (discussion post, activity, reflection, etc.) to encourage application of theories and big concepts, participants experienced multiple metacognitive moments, making their learning visible and facilitating greater engagement with the *Framework*. As one participant reported, "Reading one to three theoretical articles helped to put the topic in context and then creating and or discussing practical applications of the theory and the *Framework* helped to make the topic practical and useful."[18]

This mixture of theory and practical application challenged participants to negotiate between their understanding and the specific and varied contexts in which they were working. Highlighting the *Framework*'s emphasis on local context for implementation, participants were consistently invited to consider institutional factors when developing strategies for instructional design, assessment, or outreach to faculty. Additionally, the "choose your own adventure" structure acknowledged that different readings and activities will be a better match for participants in different contexts and situations.

Responding to Barriers

We were aware that librarians had experienced barriers to engaging with the *Framework*, thus we felt it was important to address as many of these as we could during the 23 Framework Things design process. In the literature and through our previous *Framework*-related professional development experience, we found that many librarians describe using the *Framework* to develop assessment strategies as a struggle. With this in mind, we created an Assessment track to give participants tools and a forum to tackle a variety of assessment challenges, including Thing #11: Writing Student Learning Outcomes, Thing #17: Curriculum Mapping, Thing #20: Rubric-Based Assessment, and Thing #23: Assessing Dispositions. Things from the Assessment track were frequently identified by participants as important to their learning. As one participant put it, "I'm rubbish at writing SLOs, so it was great practice."[19] Another participant described the value of learning to assess the affective dimension of learning: "Thing #23 not only gives a rationale for assessing affective outcomes, but some ideas for how to do so. How can we engage with our students, if we ignore their feelings?"[20]

Things were also created to respond to questions about collaborating with faculty and applying the *Framework* to specific institutional contexts. Communicating about the *Framework* to faculty was addressed in Thing #12: Collaborating with Faculty, Thing #15: Collaborating with Writing Programs, and Thing #16: Discipline-Specific Instruction. Knowing that participants were coming from a variety of institutions where they held a range of roles, we created an At Your Institution track and designed prompts such as Thing #14: One-Shots & IL Courses with multiple entry points and opportunities for participants to apply their learning to their own institution. Participants indicated that this emphasis on local adaptation helped them grasp the flexibility of the *Framework*. One reported, "The early discussions about the *Framework* often mentioned how it was adaptable to local needs. Between the readings and my fellow participants' posts, 23 Framework Things proved that point repeatedly and in a concrete way."[21]

Another common barrier to implementing the *Framework* is the theoretical nature of the document and the ways in which it is a departure from the *Standards*. To help participants engage with the theoretical foundations of the *Framework*, we included a Pedagogy track that addressed the Understanding by Design approach to

instructional design (Thing #13), metacognition (Thing #19), and threshold concepts (Thing #2). For Thing #1, we selected Nancy M. Foasberg's article outlining the way that the *Framework* responds to critiques of the *Standards* and the pedagogical implications of new understandings of information literacy.[22] Comments and feedback to 23 Framework Things and in-person workshops and trainings reveal that the theoretical underpinnings are not always clear to newcomers to the *Framework*, and participating in Thing #1 was a "threshold moment" for many.

While many Things addressed the learning theories that inform the *Framework*, we also intentionally included prompts that encouraged participants to take concrete steps to apply the *Framework* to their teaching practice. For example, Things from the Frame Focus track invited participants to design or adapt a lesson plan for each frame and share it via the ACRL Framework for Information Literacy Sandbox[23] or Project CORA.[24] Participants indicated that these Things served as a starting point for applying the *Framework* at an individual level. For example, one stated, "Even if I personally can't create change at an institutional level, my engagement with students can be refreshed and renewed by looking at instruction in all its forms (at the desk, online, in the classroom, etc.) through a new lens."[25]

Time is another frequently mentioned barrier to engaging with the *Framework*. Many librarians expressed that it was challenging to learn a new approach to teaching information literacy while juggling busy teaching loads and other job responsibilities. By leveraging the 23 Things "choose your own adventure" model, we were able to meet participants where they were both in terms of knowledge and experience with the *Framework* and in regard to the amount of time they could dedicate to exploring the *Framework*'s various nuances. In interviews with participants, we heard that part of what made 23 Framework Things so accessible was that it was broken into manageable chunks and allowed for divide-and-conquer approaches to content. This structure allowed for multiple paths to learning (chronological, track based, ad hoc, institutionally specific, interest based, etc.) and enabled both seasoned instruction librarians and newly credentialed librarians to enhance their understanding and improve their teaching practice. Many participants indicated that because the content of 23 Framework Things was broken into chunks, it was easier to incorporate learning about the *Framework* into their regular work schedules. One participant suggested that the program helped her take more time for learning and reflection than she would typically allow herself: "I had to give myself permission to just sit and think, process things, and then write about it. I don't always take that time or have the vehicle to do that. This gave me that time and a reason for doing it."[26] By encouraging participants to complete the Things at their own pace, the program supports long-term engagement with the *Framework*, resulting in the deeper learning called for by the *Framework*.

This flexible structure also facilitated group participation, and many participants chose to approach the content collaboratively. Some participants paired up with a colleague at their institution and compared notes, while others chose to formally adopt parts of 23 Framework Things as a departmental professional development

tool or assignment. Affinity groups could also complete the program together. For example, the Literatures in English section of the Association of College and Research Libraries invited us to present a webinar to its members followed by Twitter chats centered around *Framework* topics relevant to their group's context and focus. By incorporating flexibility into the design, users were able to make use of 23 Framework Things in unexpected ways that fit their context and needs.

Engagement

There are a plethora of free online professional development options available to librarians. To ensure that 23 Framework Things attracted participants and sustained participation, we developed a visually appealing platform and used several strategies for engagement, including game-based incentives like prizes and leaderboards, formative assessment to improve the user experience, and e-mail reminders that highlighted certain things and brought 23 Framework Things back to the forefront of participants' attention.

Reflecting the *Framework*'s emphasis on research as "an ongoing conversation in which information users and creators come together and negotiate meaning,"[27] we selected WordPress as the platform where users can communicate with each other, share ideas, and ask questions via comments. We also selected WordPress as our website content management system due to previous experience with the platform and the availability of free, attractive layout templates. Knowing that each of the 23 Things could be selected by participants to complete in any order, we chose a template that allowed each Thing to be selected from the homepage. Each Thing was represented by a custom clickable image that displayed the number of the Thing and a background representing which track the Thing is a member of (figure 4.1). We intentionally created a visual layout with engaging graphics that made the site approachable and intuitive by making each Thing easily accessible instead of using complex site navigation.

To motivate participants, we offered incentives for participating and for completing portions of the program based on a tiered system. Participants who completed a track were sent a button that we designed based on the name of the track; for example, completing the Pedagogy track awarded the participant a button with an image of whiteboard markers and the text "pedagogy: teaching is learning" (figure 4.2). These buttons were made in bulk using a button-maker machine at one of our libraries, then sent out with a letter confirming track completion. A button and certificate were sent for every track completed. Completing tracks also entered participants into drawings for prizes. The more tracks completed, the more drawings were entered, and the prizes for each successive track were more valuable. Though most participants were more motivated by learning about the *Framework*, these external motivators served as a reward for those engaged in the program, according to interviews and surveys.

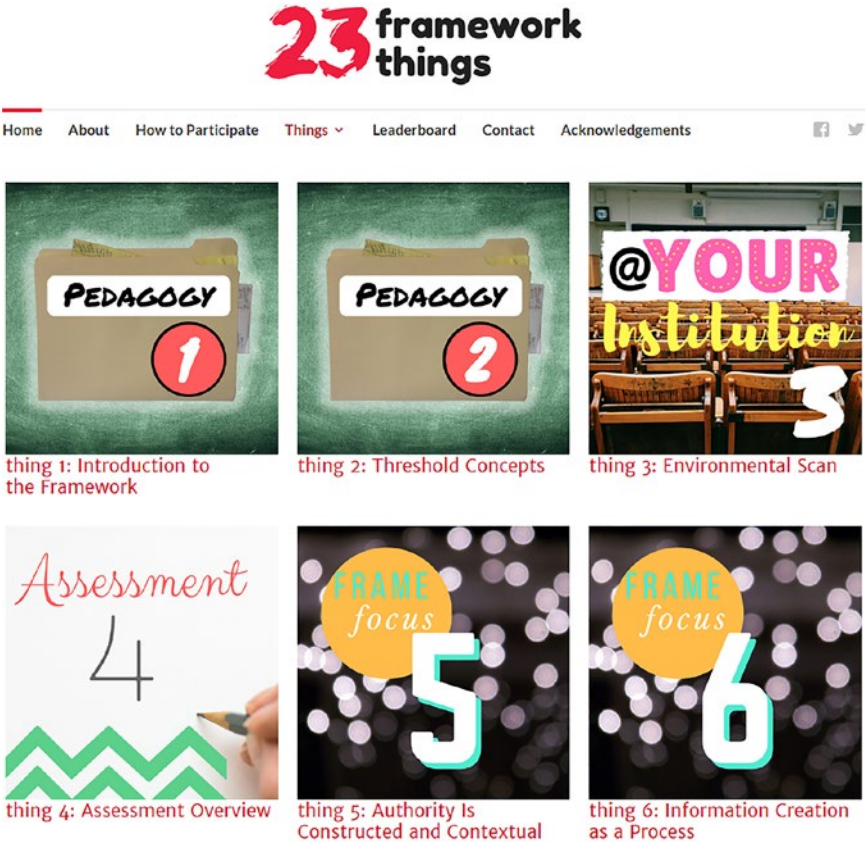

Figure 4.1. A screen capture of the 23 Framework Things homepage. ***Licensed under a Creative Commons Attribution-ShareAlike 4.0 International License***

To incentivize participants to complete more Things and add an element of gamification, a leaderboard was created to show the progress of participants who opted to have their name included on the list (figure 4.3). As participants completed more Things, their names rose up the leaderboard. This was a small incentive that built on people's sense of competition to encourage progress through the program. Participants took different forms of inspiration from the leaderboard. As one participant put it, "Though I don't consider myself a competitive person, I want to grow as a professional—compete against myself, you could say: The leaderboard helped me track my progress."[28] In contrast, one participant in a midprogram survey commented that the incentives brought out their competitive side, motivating them to finish the program. We maintained the leaderboard and offered prizes, buttons, and other incentives to participate from April 2017 to August 2018. Though we are

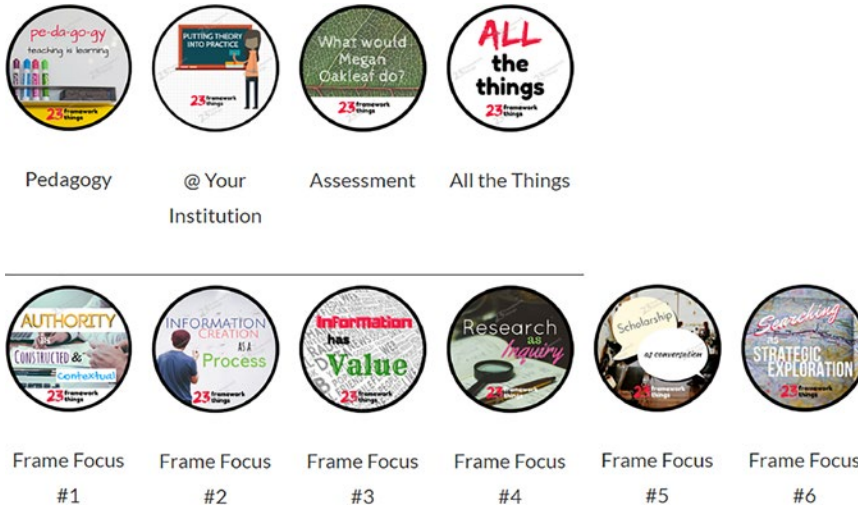

Figure 4.2. Participants received one of these buttons when they completed all the Things in a track. ***Licensed under a Creative Commons Attribution-ShareAlike 4.0 International License***

no longer offering prizes or updating participants' progress, 23 Framework Things remains open and accessible to those who still find the resources and forum to be a useful tool for engaging with the *Framework*.

While much of our engagement was based on fun and lightheartedness to encourage participation, we also conducted a feedback survey of participants midway through the program. This provided us with insight into what held participants back from progressing further into the program and what we could do to make the program more manageable. The feedback told us that some of the Things were too text heavy and required too much work to complete. Participants also requested open-access readings whenever possible and suggested that reminder e-mails would be useful to encourage progress. The survey results prompted us to streamline each Thing for length and clarity and to make participant e-mail reminders a regular part of our work on the program. We also made changes to the program based on our observation of participants' written responses to Things. Participant comments were often much more substantial and in-depth than we expected, making it difficult for participants to complete all 23 Things within our original time frame. This was confirmed by survey participants who requested more time to complete the program. In response to this feedback, we extended the time frame during which participants could earn incentives by several months.

Sustaining participant engagement in 23 Framework Things was an ongoing process that took several forms. As a subunit of the Minnesota Library Association, we worked with the MLA to post announcements and information about 23

23 framework things

Home About How to Participate Things Leaderboard Contact Acknowledgements

Leaderboard

"Slow and steady wins the race." — Some turtle

No, it really doesn't matter how quickly you complete the things but we thought we'd have a little fun with this and make a leaderboard to encourage you to keep at it.

FINAL UPDATE - September 3, 2018

Name	Organization	# of Things Completed
[redacted]	Providence College (RI)	23!
[redacted]	Providence College (RI)	23!
[redacted]	Clarkson University (NY)	23!
[redacted]	University of Southern Maine	23!
[redacted]	West Coast University (CA)	18
[redacted]	Community College of Philadelphia	17
[redacted]	Cabrini University (PA)	13
[redacted]	Okanagan College (BC)	11
[redacted]	Bethel University (MN)	11

Figure 4.3. The leaderboard displays the progress of participants ranked by number of Things completed. ***Licensed under a Creative Commons Attribution-ShareAlike 4.0 International License***

Framework Things on their social media outlets. To encourage continued participation beyond Minnesota, we sent regular e-mails to the ILI-L and ACRLFrame listservs. Further use of the program was prompted by e-mails we sent to all participants every month or two. With these e-mails, we reminded participants about the program and featured a few of the Things and how they could be useful to their

Figure 4.4. The modified 23 Framework Things logo sent for the February Valentine's Day e-mail update. ***Licensed under a Creative Commons Attribution-ShareAlike 4.0 International License***

practice. Messages were lighthearted in tone and the 23 Framework Things logo was often modified to fit the theme of that month's message (figure 4.4).

Collaborations and Communities of Practice

Our collaboration was key to the success of 23 Framework Things. Given the project's scale, it would not have been possible to complete the work involved without shared effort and a sense of accountability to each other that motivated us to stay on track. Beyond distributing the workload, our different backgrounds, areas of expertise, and work experience informed the development of the Things and ensured that the site was relevant for a range of users with a variety of needs and contexts. The collaborative process of creating the site made the three of us more aware of the significant role that community plays in responding to a professional change on the scale of the *Framework*. Our experience of building community with each other through the process of developing the program led us to the realization that 23 Framework Things had the potential to serve as a *Framework*-focused community of practice. Etienne Wenger defines communities of practice (CoPs) as "groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis."[29] Lave and Wenger developed the concept of CoPs to illustrate the ways in which learning is "situated" as part of a social, community-based process, not an individual act.[30]

The nature of CoPs makes them an effective tool for engaging in ongoing learning about the *Framework*. Amanda Nichols Hess argues that adult learning theory provides guidance for anyone interested in designing *Framework*-related professional development.[31] Drawing on transformative learning theory, she identifies the *Framework* as a "disorienting dilemma" for many librarians and describes the phases of learning librarians may need to progress through in order to "transform [their] habits of mind and frames of reference."[32] In order to support librarians who are navigating this transformational process, Nichols Hess suggests that "providing collaborative environments where academic librarians can learn from each other may help them

to acquire the necessary knowledge and skills required to embody a new instructional role, develop a plan to enact change in their teaching practices, or determine how to renegotiate or build relationships around their new understandings of information literacy instruction."[33] Based on social learning theory, Nichols Hess suggests that librarians may benefit from working through the process of change collaboratively.[34] As a virtual CoP, 23 Framework Things offers a community structure to support the kind of social learning that Nichols Hess describes.

Communities of practice can also enable librarians to address many of the challenges of *Framework* implementation we have encountered in the literature and in our own experience. Through shared effort and expertise, CoPs may reduce the time commitment required for learning about the *Framework*. Wenger, Richard Arnold McDermott, and William Snyder note that CoPs help participants to "be more daring in taking risks or trying new things, knowing they have a community to back them up."[35] This sense of security may alleviate the trepidation and disorientation Nichols Hess suggests that librarians may experience while learning to implement the *Framework*. CoP participants can also focus their collaborative efforts on common obstacles to understanding or implementing the *Framework*, including its theoretical nature and emphasis on conceptual understandings, the challenge of incorporating *Framework* concepts into one-shot sessions, and the complexities of developing collaborative relationships with faculty.

Participants in 23 Framework Things highlighted ways in which the community structure of the program impacted their learning. One participant described the program as "a little bit like journaling with a discussion board. I really appreciated learning from other people. I would use this structure again for other topics as well. It was a wonderful way to bring people together."[36] In addition to benefiting from the built-in community of 23 Framework Things, participants also described instances in which they shared 23 Framework Things content within existing communities of practice. One participant recommended a reading from Thing #23: Assessing Dispositions for a staff retreat, generating productive conversation and progress toward writing affective outcomes.[37] The Research and Learning Services Department of one library participated in 23 Framework Things as a group, dividing Things up among team members and sharing what they learned in a series of meetings held throughout the summer and fall of 2018. In an interview, the department head expressed, "Being able to talk as a group is nice versus doing it alone. If multiple of us had done it individually, we still would've tried to come together and have some conversations as a group. There's value in that and we have a practice of doing that."[38]

In the process of creating and promoting the program, IRT cochairs collaborated with many partners. Thing #22 was guest-written by Heather Collins, Joelle Pitts, and Matt Upson of the ACRL Instruction Section Innovation Award–winning New Literacies Alliance.[39] For Things #19 and #23, many experts from the library community—including Framework Task Force member and coeditor of the book *Metaliteracy in Practice* Trudi Jacobson,[40] ACRL Framework workshop codesigner and presenter Lindsay Matts-Benson,[41] and Assessment in Action project leaders Kim

Pittman and Ken Liss[42]—contributed short videos on metacognition and assessing dispositions. To promote the program more broadly and provide incentives for participation, IRT cochairs partnered with regional groups including the Minnesota Library Association, Minitex, the Minnesota Council of Academic Library Directors, and Metronet.

Assessment

In order to improve the program and evaluate its impact, we tracked usage statistics, delivered user surveys, and interviewed participants. At the time of writing, the 23 Framework Things website has received 50,714 views, 12,387 visitors, and 544 comments. There were 435 registered participants from forty-two US states plus Washington, DC, and Puerto Rico. Librarians from eleven countries outside the United States (Canada, Jamaica, South Africa, Germany, Netherlands, England, Ireland, United Arab Emirates, Qatar, China, and Australia) also participated.

In addition to gathering data on usage, we sought feedback from users during the program by inviting them to complete two separate online surveys. Participants were also encouraged to share feedback or ask questions of us via e-mail at any time. Survey comments demonstrated the program's positive impact on participants, illustrating that 23 Framework Things has helped participants understand the *Framework* more fully, feel more comfortable applying it to their teaching practice and institutional context, and become more aware of available *Framework*-related resources. Interview responses from 23 Framework Things participants also demonstrated the program's value. One participant remarked: "In addition to helping me rethink how I present information on the research process in one-shot, 50-minute library information sessions, 23 Things has also influenced how I present research strategies in the writing classes I teach. Over the past academic year, I used various hands-on resources that I first learned about while working on the Things."[43] Beyond the resources that participants were introduced to, some felt that the program provided a new view of their information literacy practice, with one participant stating that "the process can be taken in very small steps. Even if I personally can't create change at an institutional level, my engagement with students can be refreshed and renewed by looking at instruction in all its forms (at the desk, online, in the classroom, etc.) through a new lens. The 23 Frameworks Things helped me make some concrete changes to how I taught by finding new energy and ideas."[44]

For some, it simply served as a starting point for digging into the *Framework*: "23 Framework Things has introduced me to the Framework. I now have a much better understanding of Information Literacy and have a toolkit consisting of pedagogical and practical resources at hand."[45] Though these comments give only a sliver of insight into the impact 23 Framework Things had on participants, taken together with usage data, surveys, and other feedback, they indicate that 23 Framework Things provided timely and necessary support to a variety of librarians with various needs

while lessening barriers typically felt by librarians seeking professional development but lacking the funding or time to commit to other options.

CONCLUSION

Our experience creating 23 Framework Things taught us that there are many ways to approach professional development around the *Framework* or other topics, but they are most effective when you:

- design with the user in mind, considering options that address common barriers to participation including cost, time commitment, and location constraints;
- build flexibility into the design so that you can accommodate a variety of needs and audiences;
- use formative assessment tools such as surveys to do temperature checks and make adjustments to facilitate accessibility and engagement;
- create and leverage communities of practice so that participants have low-stakes affinity groups to gain inspiration, forums to discuss ideas and issues, and safe spaces to try new approaches (and possibly fail with the cushion of a supportive community); and
- collaborate with colleagues from various backgrounds who can bring different talents and experiences into the process of creating professional development tools.

Our goal for this chapter was to inspire and empower readers to develop their own communities of practice and professional development tools. Through our examples and relevant literature, we hope readers will gain confidence in learning about and applying the *Framework* no matter their institutional context or perceived barriers. We also hope that readers will be inspired by our story to tackle other challenges despite limitations imposed by time, resources, or knowledge by finding expertise in their own backyard.

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5

From Standards to Threshold Concepts, Knowledge Practices, and Learner Dispositions: Rethinking Formal Information Literacy Instruction in Higher Education

Leslie M. Ross

There is a Buddhist parable wherein an elephant was led into the land of the blind. Having never before encountered an elephant, many of the area's wisest and brightest, eager to gain insight into the nature of the beast, proceeded to investigate the animal's form with senses other than sight. When the elephant was led away, the group convened to discuss its nature and discovered to their confusion and dismay that each had a very different idea. The one who touched the leg described the elephant in terms of the leg and the one who touched the trunk described it in terms of the trunk. An argument ensued as each thought his version was the true version.[1] Lack of sight obstructed their abilities to understand deeply the nature of the beast in front of them.

Considering the parable in terms of information literacy (IL) instruction, curricula and pedagogies that emphasize standards, performance indicators, and outcomes instead of the learning process as a whole may obstruct student access to and deeper understanding of the underlying concepts that make mastery possible. In 2015, the instruction librarians at St. Ambrose University (SAU) embarked on a process to explore the impact of shifting an Information Literacy 101 course from a standards-based to a concept-based curriculum.

St. Ambrose University, diocesan and Catholic with a commitment to fostering student engagement and success in the liberal arts, social justice, and service, was founded in 1882 in Davenport, Iowa, which is nestled alongside the Mississippi River on the eastern border of the state.[2] SAU is currently home to approximately three thousand undergraduate and graduate students and offers close to eighty major areas of study.[3] From 1994 to 2000, the SAU librarians administered a not-for-credit library skills exercise that all students were required to complete before the end of their sophomore year.[4] The library skills exercise emphasized technology-related searching and basic library knowledge and included tasks that required them to

locate items in the catalog as well as selected library databases. In 2000, the Association of College and Research Libraries (ACRL) published the *Information Literacy Competency Standards for Higher Education*, which prompted the library director along with the reference librarians to begin the work of building an IL course to be added to the general education curriculum.[5] In 2001, the SAU General Education Committee approved the library's proposal for a required ten-contact hour, one-credit Information Literacy 101 (IL-101) course to replace the existing library skills exercise.[6] The first IL-101 course was piloted in the spring semester of 2001 to a group of adult students in the SAU accelerated learning program (ACCEL); the course formally began in the fall of the same year with an instruction team of reference librarians who based the IL-101 curriculum on the newly minted *Standards*. Though the new course allowed instructional librarians a little more latitude than the library skills exercise in terms of covering nontechnical skills, librarians were still finding it difficult to engage students and to demonstrate effectively the value of IL-101 and how the course content related to other academic disciplines.

In 2015, having close to fifteen years' experience teaching IL-101, the SAU instructional librarians noted that the standards, performance indicators, and outcomes model for IL had limitations. They found that the emphasis on learning outcomes narrowed the scope in such a way as to push learning processes out of the field of vision. When IL instructors focus primarily on teaching students *how* to do something and neglect the *why*, they have limited means of assessing whether students really understand the conceptual and theoretical frameworks that underpin the learned skill(s). When students are not aware of the underlying frameworks, they may not perceive how becoming information literate will deepen their understanding of and relation to learning and knowledge creation in all areas of their lives. Teaching to competency standards does provide a clear benchmark to assess student competency, but a skills-based benchmark, which can be mimicked, does not necessarily indicate a level of mastery or deeper understanding. Expanding the focus from the largely skills-based outcomes of the *Standards* to include threshold concepts (gateways), knowledge practices (abilities), and learner dispositions (attitudes and mind-sets) provides instructor and student alike with a more holistic view of the learning process and expanded opportunities to check for comprehension and make cognitive connections.

PROBLEM DEFINITION AND RESEARCH PHASE

IL-101 is a stand-alone course not connected to any major or any other course of study. It may be relatively easy to get students to engage in and to do the work it takes to pass through troublesome aspects of learning into deeper understanding when they are working toward a major in that discipline. Esther Grassian and Joan Kaplowitz stress the importance of contextualizing IL instruction and suggest that teaching IL in isolation or "in a vacuum" is counterproductive, as students tend to

engage more with content that they deem meaningful.[7] The *Framework for Information Literacy for Higher Education* provides a foundation for a deeper conversation and more opportunities to find meaning. Ann Harlow and Mira Peter looked at how introducing threshold concepts into teacher-student discourse and pedagogy impacted student learning and found that a thorough exploration of threshold concepts provided a new way to identify and talk about troublesome areas of learning, which impacted not only student understanding but also instructor understanding and pedagogical approaches.[8]

In 2015, the ACRL published a Delphi study conducted to identify threshold concepts that may be critical for a deeper understanding of topics related to the instruction of IL in higher education.[9] According to Jan Meyer and Ray Land, within each discipline lies a unique set of threshold concepts or "conceptual gateways," which, once grasped, lead to deeper understanding, cognitive growth, and a transformed view.[10] In the final iteration of the *Framework*, the six threshold concepts were: Authority Is Constructed and Contextual, Information Creation as a Process, Information Has Value, Research as Inquiry, Scholarship as Conversation, and Searching as Strategic Exploration.[11]

METHODOLOGY

An action research plan was developed and deployed to assess the existing IL-101 standards-based curriculum in order to identify conceptual blind spots that may have resulted from an uneven emphasis on learning outcomes over the learning process. *Action research* is a term coined in the 1940s by the social psychologist Kurt Lewin, whose theories made a significant impact on the study of organizational behavior. Action research is problem based and is designed to allow a researcher to generate information or answers to research questions around an existing problem and, at the same time, apply the gleaned knowledge toward a solution to the problem.[12] The action research method was chosen by SAU instructional librarians in order to expeditiously solve an exigent problem. We hypothesized that a curriculum based on the *Framework* rather than the *Standards* had the potential to impact positively student learning as well as student and instructional librarian engagement within the IL-101 course. The action research process was guided by four primary research questions:

1. How would mapping a standards-based IL-101 curriculum to the *Framework* with its threshold concepts and knowledge practices impact the scope and content of the core curriculum?
2. How would mapping a standards-based IL-101 curriculum to the *Framework* with its threshold concepts and knowledge practices impact assignment design?
3. How would adopting a *Framework*-based curriculum for the IL-101 course impact instructional librarian perceptions of experiences and pedagogical practices?

4. How would adopting a *Framework*-based curriculum for the IL-101 course impact instructional librarian perceptions of student experiences and or learning?

IMPLEMENTATION PHASE

A benefit of using an action research approach was that it was work based, and we were able to start collecting data immediately and make changes and course corrections along the way. Limitations of this study were that it was designed and conducted relatively quickly in order to effect prompt change and, due to the fact that the focus group participants constituted a homogeneous group, generalizing the findings to a larger or heterogeneous population may be problematic.

The following is the original outline of the implementation phase of the action plan:

1. Map curriculum and assignments to the *Framework* (considering threshold concepts and knowledge practices). [Curriculum and assignments mapped at the time of this writing]
2. Develop course objectives that incorporate frames and knowledge practices. [In progress at the time of this writing]
3. Workshop and develop rubrics for IL-101 (customize the Information Literacy VALUE Rubric?)[13] and appropriate assignments. [Not started at the time of this writing]

The initial implementation of the action plan was a curriculum-mapping project conducted by instructional librarians. The planning process was heavily influenced by insights gained from research on the use of threshold concepts in pedagogy including course design and evaluation[14] and on the specific application of threshold concepts to IL instruction.[15] The data collection methods used included focus groups, observation, and document review.

Curriculum Mapping

Step 1 in the action research plan was to map the existing *Standards*-based course curriculum to the *Framework* in order to identify and address academic and conceptual gaps for purposes of expanding the focus of the course to include concept-based learning or abilities in addition to what Grassian and Kaplowitz term "mechanics" or skills.[16] The curriculum-mapping project was executed via a series of focus groups populated by seven SAU instructional librarians and the library director, making our sample size eight. (See table 5.1 for the action plan for the first year of the project.)

First, we identified each subject covered in our classes and recorded them on individual sticky notes. The notes were collected and sorted into categories by the focus group facilitator. The participants then assessed the subjects group by group and

Table 5.1. Action Plan 2015

June			
1st mtg.	*2nd mtg.*	*3rd mtg.*	*4th mtg.*
Begin series of meetings with IL-101 instructors			
Sticky notes activity: instructors write subjects on individual sticky notes; all responses grouped into categories. Categories with higher numbers of sticky notes considered core curricular items. Outliers considered optional curricular items.	Map core and optional curricular items to threshold concepts. Look for weak coverage.	Map core and optional curricular items to threshold concepts looking for weak coverage (cont.).	Sticky notes activity for "favorite" assignment from curricular groups that map to Authority Is Constructed and Contextual; divide into distinct assignment groupings; map each.

assigned category titles that conceptually fit each set. We found that every instructor regularly taught the following content areas: search, Boolean operators, visual literacy, library orientation, citation, evaluation of information, topic development, primary and secondary sources, ethical use of information, and the research process. We labeled this set *core* or *required content areas* for our program. There remained four subjects that some, but not all, instructors regularly taught: college writing expectations, online privacy issues, multiple literacies, and the news/information cycle. We labeled this set *optional content areas*. The next step was to examine our newly minted core content and optional content areas lists in the context of the threshold concepts of the *Framework* and label each content area with the name of the threshold concept(s) that best fit. Not surprisingly, each of the content areas we identified fit one or more of the threshold concepts. For example, what we labeled *search* was a topic that would conceptually fit within the frames Searching as Strategic Exploration, Scholarship as Conversation, and Research as Inquiry. Moreover, the distribution of the core content areas across the threshold concepts was relatively even (see table 5.2).

Next, instructional librarians examined each core content area and created a collective list of assignments and coursework that would fall within the category and mapped those assignments to the knowledge practices of relevant threshold concepts. It was not until we added the knowledge practices to the map that we began to see uneven coverage. For the threshold concept Authority Is Constructed and Contextual, our list included assignments on the following themes: popular versus scholarly periodicals, scholarly content and dissertations, Wikipedia exploration, author

Table 5.2. Mapping Standards-Based Curriculum to the *Framework*

Required content area (standards-based)	*Threshold concept*
Search	Searching as Strategic Exploration, Scholarship as Conversation, Research as Inquiry
Boolean operators	Searching as Strategic Exploration
Visual literacy	Authority Is Constructed and Contextual, Information Creation as a Process, Information Has Value
Library orientation	Information Has Value
Citation	Authority Is Constructed and Contextual, Scholarship as Conversation, Information Has Value
Evaluation of information	Authority Is Constructed and Contextual, Scholarship as Conversation, Information Has Value
Topic development	Scholarship as Conversation, Research as Inquiry, Information Creation as a Process
Primary/secondary sources	Authority Is Constructed and Contextual, Scholarship as Conversation, Searching as Strategic Exploration
Ethical use of information	Scholarship as Conversation, Scholarship as Conversation, Information Has Value
Research Process	Scholarship as Conversation, Research as Inquiry, Authority Is Constructed and Contextual

investigation, developing a critical voice, print and online source evaluation, and ethical use of information. We considered our list in the context of the knowledge practices ascribed to the Authority Is Constructed and Contextual threshold concept, which are:

- define different types of authority, such as subject expertise (e.g., scholarship), societal position (e.g., public office or title), or special experience (e.g., participating in a historic event);
- use research tools and indicators of authority to determine the credibility of sources, understanding the elements that might temper this credibility;
- understand that many disciplines have acknowledged authorities in the sense of well-known scholars and publications that are widely considered "standard," and yet, even in those situations, some scholars would challenge the authority of those sources;
- recognize that authoritative content may be packaged formally or informally and may include sources of all media types;
- acknowledge they are developing their own authoritative voices in a particular area and recognize the responsibilities this entails, including seeking accuracy and reliability, respecting intellectual property, and participating in communities of practice; and
- understand the increasingly social nature of the information ecosystem where authorities actively connect with one another and sources develop over time.[17]

When we mapped these assignments to the knowledge practices we found that they supported the development of certain knowledge practices on the list but neglected others. We were doing a great job of teaching to the knowledge practice "use research tools and indicators of authority to determine the credibility of sources" (five of the seven assignments) but were not effectively supporting the remaining knowledge practices (see table 5.3). Notably, the knowledge practice that virtually all of the assignments supported is one that may better describe a mechanical skill or outcome rather than an ability. In fact, it shares characteristics with Performance Indicator 1 of Standard 2 of the *Standards*: "The information literate student selects the most appropriate investigative methods or information retrieval systems for accessing the needed information."[18] We then continued with the remaining threshold concepts and found that within each threshold concept, our *Standards*-based curriculum supported well only one or two of the assigned knowledge practices in each grouping.

IMPACT OF THE PROJECT ON ASSIGNMENT DESIGN

The curriculum-mapping project had, as hypothesized, exposed "hidden" conceptual structures underlying our core curricular areas and highlighted certain problematic

Table 5.3. Assignments Mapped to Knowledge Practices (KPs truncated. See text for the full listing.)

Sample assignments	→	*Knowledge practices*
A. Popular vs. scholarly periodical assignment	D, F	Define different types of authority, such as subject expertise . . . , societal position . . . , or special experience . . .
B. Scholarly content: Dissertation assignment	A, B, C, D, F	Use research tools and indicators of authority to determine the credibility of sources . . .
C. Wikipedia exploration assignment	D, F	Understand that many disciplines have acknowledged authorities . . .
D. Author investigation assignment	B, F	Recognize that authoritative content may be packaged formally or informally . . .
E. Developing critical voice assignment	F, G	Acknowledge they are developing their own authoritative voices in a particular area and recognize the responsibilities this entails . . .
F. Source evaluation assignment	B, C	Understand the increasingly social nature of the information ecosystem . . .
G. Ethical use of information		

assignments, which enhanced not only my vision of the processes of learning but also changed some of my core beliefs about what I had been teaching for (at the time) almost ten years. After the mapping process, we each took to the classroom to continue our exploration of the new (to us) knowledge practices and began to design assignments to fill the gaps that we uncovered. One of the first changes I made after having worked so closely with the *Framework* had to do with the threshold concept Authority Is Constructed and Contextual. I devote a lot of class time to the research process and source evaluation and typically assign a number of scaffolded assignments that lead to a final, cumulative project that I hope will demonstrate to me that the students have the skills, abilities, and attitudes needed to be able to effectively recognize, evaluate, and make sense of what they see, feel, hear, or touch as well as what others have said, written, or demonstrated. A recurring phenomenon that I have noticed over the years is students who turn in technically correct work, like an annotated bibliography, which requires skills as well as abilities, but who, when pressed, cannot tell me what they learned, how they learned it, and why it is important. This is why the first assignment that garnered my attention had to do with source evaluation and evaluation criteria. I had been using the CRAAP test rubric, which asks students to evaluate sources by applying the following criteria: currency, relevance, authority, accuracy, and purpose.[19] I noticed students sometimes selected sources that fulfilled all the criteria, but in the end were not suited to the assignment. After studying the Authority Is Constructed and Contextual section of the *Framework*, I realized that the element of the CRAAP test that was the most problematic for my students was *authority*—not that it didn't belong, but that it may have been in the wrong place. In the context of the CRAAP test, authority refers mostly to the creator of the content and the creator's credentials. In the context of the *Framework*, authority is considered a foundational concept. I was thus inspired to begin to experiment with different sets of evaluation criteria in my classes. Instead of asking students to evaluate sources, the new list of criteria I created asks them to *determine the authority of resources*. On the current iteration of the rubric, the criteria are context, suitability, origins, and packaging. I begin the lesson by reading the Authority Is Constructed and Contextual threshold concept and follow it up with a class discussion. I have noticed that since I made this change, my students struggle less with this assignment. It may be that the addition of concepts to mechanics makes it easier to understand but it may also be that *I* understand it on a deeper level and have become better able to teach it and check for understanding before moving on to the next subject.

PARTICIPANT REFLECTIONS

Since the launch of the curriculum mapping project in 2015, the SAU instructional librarians have had ample time to study the *Framework* and to implement curricular and pedagogical changes aimed to expand the focus from the largely skills-based outcomes of the *Standards* to include threshold concepts (gateways), knowledge

practices (abilities), and learner dispositions (attitudes and mind-sets). The instructional librarians were asked to reflect back on the research process by answering a series of written survey questions about their experiences since the project began. Instructional librarians feel the impact of the shift to the *Framework* in different ways and at different levels: for one instructor, pedagogy has changed the most; for another, classroom communication; and for yet another, the shift has precipitated a change in worldview. SAU instructional librarians started this conversation almost five years ago, but the following responses to the survey questions reveal that we are nowhere near the end of the discussion.

Follow-Up Q & A with Instructional Librarians (IL) from January 2019 (mapping project began in 2015)

1. Please describe any successes you have observed in class, or instances of greater understanding or engagement on the part of the students since the *Framework* curriculum mapping project began:

> "The infographic process makes quite a few students have a light bulb go off and they say it is a very useful thing."—IL1

> "This is perhaps a mixed example, but one that I think is important as being related to the above discussion. My discussion of plagiarism now incorporates more material relating to copyright & public domain as a means of opening up the discussion to societal and legal concerns they might have heard about in other venues, while contrasting legality vs. ethicality in a manner which opens up to a broader discussion about the ethical uses of information. Students often seem more engaged when they're able to discuss these ethical issues in terms/discussions they have had outside the classroom, and relating and contrasting them to the issue of plagiarism in an academic setting provides greater context to why plagiarism is an important issue to engage with.
>
> "At the same time, this greater context serves to muddy issues that previously seemed more straightforward. Contrasting legality with ethics conflates the two for some students, and they mistakenly feel that if something is legal it's ethical. As a result, a previously intuitive ethical understanding about, say, the public domain ('using others people's work is wrong') becomes an incorrect view ('you can legally copy other people's work so it's not plagiarism').
>
> "Now, it's possible that this is because I present the information confusingly, or in an inefficient manner—I'd like to think that's not the case, but there has to be some reason why the class average on the homework for this topic has gone down (although don't ask me for hard numbers on that). However, the students who do well on the assignment are exhibiting much more nuanced explanations on the homework.
>
> "On reflection and after writing this out, perhaps it's just an unqualified success, and my previous approach to the topic was less discriminating than I thought it was. Either way, I consider this an overall success, as I feel like the answers that I'm seeing convey more thought and consideration than they

previously did, and the class as a whole is definitely more engaged with classroom discussion on the topic than previously was the case."—IL2

"For the past few semesters, I've had students write a response paper at the end of the class reflecting on the *Framework*. I ask them to address what frames have been the most beneficial to their learning (with examples) and which frames they understand least. The overwhelming majority have taken this assignment seriously and really contemplated their learning—much more so than when I had asked them to write a reflection about their learning without the *Framework*. I feel like the *Framework* helps students understand the heft of information literacy. They see that's it's not just 'library research' but much more of a life skill."—IL3

2. Do you feel more engaged as an instructor? Why or why not?

"Yes, because it is not just a boring cookie-cutter skill exercise—one has to develop paths to draw out students' own realizations of what undergirds the skills."—IL1

"I do, as I feel freed to engage with the more conceptual aspects of information literacy in the classroom. While my previous approach focused on clarity in the final product, I feel myself moving more towards instilling a comfort with ambiguity or contextual understanding in the students as being a valuable aspect of the class. This requires greater engagement on the part of the students, which can be a barrier when there's a disconnect between myself as an instructor and the class. But, as the lows may be lower—the highs are also higher."—IL2

3. Do you feel you have a greater understanding of the content you are teaching? Why or why not?

"I feel I have a better grasp, in terms of being able to better articulate the importance of [information literacy]."—IL1

"Yes, although I also question how much of that is simply becoming more comfortable/confident as an instructor. This position was my first to have a formal teaching component, and I had less than three years' experience before the Framework was introduced. As such, I don't know how much of my understanding comes from the freedom offered by the Framework, and how much comes from simply gaining more experience with what does and doesn't work in the classroom in general."—IL2

4. Please describe any feelings you have had about the course content you are teaching that have changed for better or worse since the *Framework* curriculum mapping project began:

"I feel that it has been a change for the better overall, but I do feel that I do not teach citation as closely as I used to, element by element and I see that there is not as much time to do that in the [*Framework*] type class"—IL1

> "I'm feeling more conflicted about working with information where I'm requiring engagement with particular types of materials (i.e. specifically looking for books or journal articles). I feel like I'm trying to thread a needle between providing guidance for what resources might be most appropriate at different stages while still trying to instill dispositions such as 'resist the tendency to equate format with the underlying creation process' or 'recognize that authoritative content may be packaged formally or informally and may include sources of all media types.'
>
> "This, I feel, points to the aspects of a *Framework* orientation that I most struggle with—I love the focus on information literacy as being a frame of mind, of being an orientation towards [or] mode of thought. It's a frame that systematizes and reinforces the value of information literacy as a fundamental component of a liberal arts education. However, I struggle with imparting this information in the context of a class which also needs to include skills-based instruction. The focus on contextual understanding, on students being able to evaluate and process their own needs and strategies based off of a multitude of information streams can conflict with ensuring that they have the basic skills required to begin their searching."—IL2

> "Overall, the *Framework* has increased my sense of the importance of information literacy and also expanded my ideas of what [information literacy] is. Although it's hard for me to separate my use of the Framework and the current sociopolitical climate—both of them contribute to my strong belief in the need for [information literacy]. I will say that I've moved to focusing on [information literacy] as a life skill, not just a college skill and I think the Framework supports that."—IL3

CONCLUSION

SAU instructional librarians noticed that some students struggled to see how the standards-based course outcomes of IL-101 related to their scholarship as a whole and observed that the perceived disconnect may have led to a devaluation of the course in their minds and lower levels of learning and engagement. One advantage of viewing IL through the theoretical lens of threshold concepts is that it provides a framework for IL instruction, which brings to the fore central concepts that, once grasped, can lead to deeper understanding of the subject matter on the part of the student but also an expanded view of the student learning environment on the part of the instructor. We thought that a successful shift to the *Framework*-based approach to IL instruction had the potential to increase student learning and engagement in IL-101 as well as other courses. Through the implementation of the curriculum-mapping project, we were able to expand our view of the learning process to include threshold concepts (conceptual gateways), knowledge practices (abilities), and learner dispositions (attitudes and mind-sets), and gain insight into pedagogical approaches, including new assignments, that have the potential to

improve student engagement and learning. The process has also stimulated a rich and ongoing discourse among the SAU instructional librarians, and we hope to continue the conversation well into the future. Going forward, we plan to continue the work we started in 2015 and expand the conversation to the campus community as a whole. Incorporating the *Framework* into our dialogues with SAU faculty, staff, and students may allow us to find points where our threshold concepts intersect with those of other disciplines, thus highlighting the most natural areas of potential collaboration across disciplines.

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6

An Idea That Sells Itself: The *Framework* as a Partnership Guide and Faculty Marketing Tool

Sarah Steele, Steve Bahnaman, Brooke Taxakis, Ron Epps, and Elizabeth Dobbins

The Association of College and Research Libraries' (ACRL) *Framework for Information Literacy for Higher Education* was adopted in 2016 with the intention of promoting a "richer, more complex set of core ideas."[1] Those core ideas were intentionally designed to have diverse applications across the array of disciplines in higher education. Instead of a set of specific competencies for using library resources, adaptable threshold concepts were incorporated as the six frames of the *Framework*.[2] Many librarians and researchers have noted that the *Framework* provides librarians with language about information literacy more in line with faculty members' ongoing concerns about critical thinking, contextual pedagogy, and metaliteracy.[3] Upon adopting *Framework* language for our own Information Fluency Plan,[4] Campbell University Libraries has found that the frames' language enables us to justify and create collaborative instructional projects. This chapter will detail some experiences we have had partnering with faculty members to teach the *Framework*, and our choice to use it as a marketing tool.

LITERATURE REVIEW

The Framework and Its Vocabulary

For Campbell librarians, the *Framework* has proved a valuable tool for engaging faculty because of its conceptual vocabulary.[5] Though not without dissent, the prevailing opinion on the *Framework* seems to be that it replaced concrete outcomes present in the preexisting *Information Literacy Competency Standards* with more flexible but broader literacy goals.[6] These concepts align with faculty members' overall goals in critical-thinking instruction.

For example, one of the most substantial additions to the *Framework* is the concept that Scholarship Is a Conversation, which emphasizes the idea that sources' credibility or validity can be challenged in a variety of different ways, while the *Standards* stressed that students should look for ways to *determine* validity and authority. Many respondents to Jonathan Cope and Jesús E. Sanabria's 2014 study of faculty members, conducted before the *Framework* was released, noted that students were conditioned to accept information that came from institutional authorities, while faculty members would prefer students to realize that even peer-reviewed scholarship often includes disagreement.[7] The *Framework*'s introduction of Scholarship Is a Conversation therefore seems an ideal theme for a librarian who wishes to engage with faculty members who may have felt underserved by previous conversations about information literacy.

Similarly, writing professors have been teaching "writing as a process" for many years; the *Framework* defines the frame Information Creation as a Process in a similar way, emphasizing iterative choices instead of a start-to-finish set of information goals.[8] These are just two major examples of the *Framework*'s opportunities for engaging with faculty members on thematic vocabulary. Many other voices in the library field have also identified the *Framework* as providing vocabulary for faculty and librarian goals to align more closely.[9]

Collaboration with Faculty

Even at the most basic level of the one-shot instruction session, librarians at most institutions rely heavily on collaboration with departmental faculty. Librarians must secure faculty members' class time and demonstrate value in order to be called upon semester after semester. However, the *Framework*—with its longer-term and more thoroughgoing goals—has necessitated deeper engagement with faculty members and an increased emphasis on assignment design and larger concepts of metaliteracy.[10]

The concept of embedded librarianship grew rapidly in the 2000s and early 2010s. Librarians would attach themselves to classes via courseware and find other social media outlets through which to engage students on a semester-long basis.[11] Many different goals, including increased librarian visibility and student engagement, were met by this trend of engaging via software, but as time went on the *longitudinal* aspects were more emphasized; what was "embedded" often was not the librarian, but the skills and concepts building toward information literacy over time.[12] As the *Framework* has pushed the idea that information literacy is "a more sophisticated and contextual concept relevant to student learning throughout their academic careers," the library instruction field has grown increasingly aware of the need for more long-term interaction with students.[13]

The *Framework* and information literacy itself do not intrinsically engage faculty members. Librarians' successful outreach to departmental faculty has always relied on good liaison relationships.[14] A great deal of research is still being conducted to

help librarians determine what faculty members generally value, and what they value with respect to certain types of assignments.[15]

Marketing of Information Literacy Services

Perhaps surprising to those new to the field, the current scholarly landscape within academic librarianship includes a thriving conversation about marketing. Whether through professional conferences like the Library Marketing & Communications Conference or in published journal articles and books, librarians are grappling with how best to market library services and resources to faculty members, students, and administration.

In daily work, librarians incorporate marketing tasks, which may vary from small projects like designing a poster promoting an event to planning and executing strategic campaigns. A 2014 study found that 38 percent of academic library job listings included a marketing-related job duty, while only 11 percent of the total job listings required or preferred experience with marketing.[16] These job postings included positions across the spectrum of the library organization. We can infer from this, and from other studies with similar results, that librarians are actively involved in marketing library services and resources, but may have little formal training in marketing to support their efforts.[17]

One might argue that, regardless of our job description, librarians are marketing the library every day, in each reference desk interaction, library instruction session, or conversation with a faculty member.[18] Of particular importance for librarians is relationship marketing, which emphasizes the importance of developing relationships with customers that allow the librarian to perceive their needs in order to better support them and make them feel welcome.[19] Relationship marketing with teaching faculty members is crucial for establishing longitudinal partnerships in information literacy instruction. In fact, many libraries have developed library liaison programs to structure the development of personal relationships between a librarian and an academic department. Campbell's library instructors have found that our preexisting positive relationships with faculty members proved most fruitful for engagement with the *Framework*, but that the *Framework*'s conceptual vocabulary encouraged deeper collaboration by meeting faculty members' needs, as demonstrated by our experience.

CASE STUDY

The case study described in this chapter illustrates how the ACRL *Framework* vocabulary resonates with faculty members' own research and teaching objectives. It has been our experience that when faculty members read the knowledge practices and dispositions described in the *Framework*, they see themselves as researchers, and they also see a road map for developing their students as researchers.

In March 2016, an influential English professor on Campbell University's campus was first exposed to the ACRL *Framework* at the Council of Independent Colleges (CIC) Information Fluency in the Disciplines Workshop.[20] This workshop, cosponsored by the ACRL, is offered yearly to independent colleges and brings together disciplinary faculty, librarians, and administrators to collaborate on improving student learning. Having just been formally adopted by ACRL in 2016, the *Framework* was entirely new to most participants in the March 2016 workshop.

At the CIC workshop, the language of the *Framework* resonated with Dr. Sherry Truffin, associate professor of English and chair of the General College Curriculum. Joined by her team of colleagues, she revised an existing assignment in her ENGL 300: Literary Research and Criticism class. Of the workshop, she said:

> One presentation about emphasizing the research process in an upper-division English class was really inspirational to me. The professor had developed a series of scaffolded assignments designed to "force" students to have a more robust research process. The big thing . . . was comparing how students do research to how we want them to do research. Some of what I got out of the conference was getting students to articulate what it is that they do when they research and then trying to move them toward the *Framework*.[21]

For Dr. Truffin's ENGL 300 classes, this articulation of the research process materialized in a required electronic Research and Writing Log maintained in Google Forms and shared between librarian Sarah Steele and the professor.[22] Questions in the form included:

1. Name
2. Date
3. Time/duration of writing or research
4. Detailed description of activity (Example: search terms, techniques, sources consulted and why, etc.)
5. Success and failures of process
6. Research Question Check (Do you need to adjust your research question?)
7. Information Fluency *Framework*: Which frame(s) apply to the work you just completed? Mark all that apply.
    a. Scholarship as Conversation
    b. Information Creation as Process
    c. Information Has Value
    d. Research as Inquiry
    e. Authority Is Constructed and Contextual
    f. Searching as Strategic Exploration

In the log, students took the time to reflect on their research processes. When students slowed down, documented their successes and failure, and reflected on the *Framework*, they showed evidence of maturing as researchers. One student, with more than twenty-nine log entries, went on to win an award for her research paper

at the library's annual academic symposium for student research, showcasing some of the best projects completed on campus.[23] Participation in the symposium involves nomination by a faculty member and selection during a blind review process.

The Research and Writing Log proved useful. Both the librarian and English instructor monitored student responses to the Research and Writing Log throughout the semester. At the end of the semester, it was possible to assess whether students displayed the following knowledge practices and dispositions by using the students' responses within the Research and Writing Log:

- Information Has Value
  - Disposition—Student values the skills, time, and effort needed to produce knowledge.
- Research as Inquiry
  - Knowledge Practice—Student deals with complex research by breaking complex questions into simple ones.
  - Disposition—Student demonstrates intellectual humility (recognizes their own intellectual or experiential limitations).
- Searching as Strategic Exploration
  - Disposition—Student understands that first attempts at searching do not always produce adequate results.
  - Disposition—Student seeks guidance from experts, such as librarians, researchers, and professionals.

While neither the *Framework* knowledge practices nor the dispositions were created with the intent to be used as course learning outcomes, we have found that it is possible to treat them as such.[24] In our Information Fluency Plan, the knowledge practices and dispositions are numbered and lettered for easy reference.[25] In their lesson plans, librarians phrase these as learning outcomes and design rubrics to measure these learning outcomes when conducting authentic assessment of students' work. For example, in the classroom presentation, the librarian modeled how to persist through perceived failure when researching. The Research and Writing Log entries revealed students' success in doing so. This learning outcome was evaluated using Searching as Strategic Exploration Disposition 6b in the rubric: "Student understands that first attempts at searching do not always produce adequate results" (table 6.1).

The Partnership

The professor chose to introduce the *Framework* directly to her students in class rather than having the librarian do so. Her choice illustrates how much the *Framework*'s vocabulary resonated with her teaching objectives. A simple library handout with our Information Fluency Plan graphics supplemented that discussion.[26] The English professor also taught the distinctions between the various lenses of literary criticism, as they were the focus of the course.

Table 6.1. Excerpt from ENGL 300 Rubric

Searching as Strategic Exploration				
Dimension	*Exemplary (4)*	*Accomplished (3)*	*Developing (2)*	*Beginning (1)*
Disposition 6b—Student understands that first attempts at searching do not always produce adequate results.	Failed search attempts were acknowledged as such in research log and a plan to persevere was articulated.	Failed search attempts were acknowledged as such in research log.	Student tried similar search over and over without recognizing it as a failed search attempt.	Student uses the first results that they uncover.

In the middle of the semester-long project, the librarian gave a presentation titled "The 'Failed' Search" to model how students might persist when common research hurdles present themselves. Using students' research questions, the librarian modeled searches for literary criticism in the library catalog and in various databases (JSTOR, Literature Criticism Online, Literature Online, MLA International Bibliography, and PsycARTICLES). The course LibGuide, designed by the librarian, pointed students toward these resources.[27] As problems with keywords or issues of access presented themselves, the librarian helped troubleshoot individual searches with the ENGL 300 students and modeled how to persevere through perceived failure.

After this presentation, the librarian continued to be involved in students' work by monitoring the Research and Writing Log and facilitating one-on-one research consultations. The individualized and specific insight gained from reading the Research and Writing Log entries was critical to the librarian's understanding of the students' search processes and greatly improved the quality of individual consultations.

Assessment of the ENGL 300 Partnership

We chose a multifaceted and very thorough approach to assessing this partnership, as it was serving as a kind of pilot for this level of collaboration. Assessment included a student satisfaction survey, a faculty feedback survey, authentic assessment of students' final papers, and a reflective essay written by each student. Student feedback shared in the student survey about "The 'Failed' Search" library presentation was positive. A sample of open comments from the survey are provided below:

Q: What was the most useful thing you learned in this session?
A: "Learning about the databases"

A: "How to use the interlibrary loan system"

A: "I learned how to refine my searches, while also learning that a failed attempt is okay."

A: "I learned how to rephrase initial search questions to gain more search results."

Likert scale responses in the same student survey revealed that 100 percent of students "Agreed" or "Strongly Agreed" that the information presented was useful to their work as students and that they learned something new.[28] These results are important considering that the students in this bridge course are sophomores and juniors, so they have already had at least one, but usually several, library sessions in their academic career. In the end, 91.6 percent of students reported feeling comfortable beginning their research after the library presentation. Those who gave lower scores for the "I feel comfortable beginning my research" question had an opportunity to increase their confidence during subsequent personalized research consultations with the librarian.

Faculty feedback about the presentation was also positive. Of the library presentation, the professor wrote:

> This session was EXTREMELY helpful. I was especially pleased with the focus on persisting through failed searches and the use of students' actual research questions/topics. (ENGL 300 professor, fall 2016)

Students' final papers were assessed using a *Framework*-focused rubric.[29] In addition to the knowledge practices and dispositions assessed using the Research and Writing Log, the following knowledge practices and dispositions were assessed using the students' papers:

- Scholarship as Conversation
  - Knowledge Practice—Student cites the contributing work of others in their paper.
  - Disposition—Student sees his/her self as contributor to the scholarly conversation rather than only a consumer of it.

Authentic assessment results placed students, on average, at the "Accomplished" benchmark for this bridge course for English majors, a highly positive result. Assessment results reflected a need for only a few modifications. In order to guide students to apply Research as Inquiry knowledge practices, the professor added this question to the Research and Writing Log: "Have you discovered or developed new sub-questions related to your research question?" The librarian noted the need to be more proactive in reaching out to students who are struggling in a few ways: forwarding Research and Writing Log entries that are "red flags" to the professor; suggesting sources, search terms, or databases to students when they are struggling; and sending group e-mails to students to encourage them with research-related tips.

At the end of the course, students wrote reflective letters to future ENGL 300 students. Reflecting on their own writing process for a paper titled "Unclean: Flannery O'Connor's Depictions of PTSD in *Wise Blood*," one student expressed how the *Framework* changed their understanding of scholarship:

> In the past, I have struggled with finding relevant articles, especially for assignments requiring a significant quantity of sources. Especially helpful in this development was the *Framework* for information literacy. After learning the *Framework*, I feel that I now have a different concept of research and academic work . . . I now believe that information effects [*sic*] understanding and knowledge, which are tools to interpreting the world that we live in. (ENGL 300 student, fall 2016)

The professor told colleagues that, overall, she felt that the research component of this class is the strongest she has experienced in her teaching career. We recorded a YouTube interview with Dr. Truffin in order to capture her positive perception of the partnership, which can also serve as future material for marketing to faculty.[30] This ENGL 300/library partnership continued in fall 2017 and was used as a model during fall 2018 when ENGL 300: Literary and Research Analysis was taught by a different professor.[31] The assessment results in this course were telling and the news of the *Framework* began spreading.

More Framework Partnerships Flourish

This successful partnership has led to further promotion of the ACRL *Framework* among Campbell University faculty. In its spring 2017 issue, Dr. Truffin contributed an article to *Newsline* titled "Collaborating to Nurture Scholarship."[32] *Newsline* is a library newsletter distributed each semester to Campbell University's Friends of the Library and also to every faculty member on campus, making it a great place to spread the word about the ACRL *Framework* to university faculty.

In the same year, Dr. Truffin and librarian Sarah Steele received a Council of Independent Colleges Information Fluency in the Disciplines Grant, a follow-up grant to the CIC Workshop, allowing them to lead a summer 2018 workshop on campus for faculty entitled A Research Mindset: Helping Students Shift from Compliance to Discovery. Details of their recent ENGL 300 partnership were shared during the two-day workshop, along with various *Framework* exercises. Learning outcomes for the two-day workshop included:

- Participants will become conversant in the American Library Association's *Framework for Information Literacy*.
- Participants will recognize the value of the *Framework* in shaping scholarly attitudes, skills, and habits.
- Participants will construct or revise a research assignment informed by the *Framework for Information Literacy*.

Ten university faculty members in the humanities were offered stipends for attendance and were introduced to the language of the *Framework*. Participants were granted time to work with liaison librarians to revise an existing research assignment challenging students to exhibit knowledge practices and dispositions from the ACRL *Framework*. These faculty members walked out of the workshop ready to apply the *Framework* as they partner with librarians to develop their students as researchers.

One product of the workshop came at a time when the library and campus community were celebrating the 200th anniversary of Mary Shelley's *Frankenstein*. One of Campbell's English adjunct faculty members used what she learned in the summer workshop to design a "Frankenfolio" for students. Much like Dr. Truffin, this professor scaffolded assignments while partnering with a librarian to teach important *Framework* concepts such as how to search strategically for reference sources and secondary sources.[33]

In addition, the cross-disciplinary conversations among humanities faculty in the summer workshop helped a Christian studies professor realize that his undergraduates had already been exposed to the frame Scholarship as Conversation in freshman English. In response, he chose to further develop his undergraduates' knowledge practices within this frame as they engage with medieval theological texts. As was modeled in ENGL 300, this professor plans to require research consultations with the Christian studies library liaison and will scaffold the writing assignment.

Keeping the Momentum Going

Out of genuine interest, our original faculty partner continues to advocate for the use of the ACRL *Framework* to colleagues on campus. She will be incorporating *Framework* exercises in her upcoming Honors Program pedagogy workshop and is also interested in coleading another Research Mindset workshop with a librarian for faculty on campus in the humanities and social sciences.

Because the *Framework* is the core of its Information Fluency Plan and because it resonates so well with faculty partners, the library has developed a number of marketing materials to expose its vocabulary to our faculty.[34] The next section of this chapter introduces library marketing materials designed with visual elements that help communicate the *Framework* to faculty and students.

MARKETING THE *FRAMEWORK*, MARKETING OURSELVES

In conversations with faculty members, librarians often emphasize the library as a service unit on campus, and rightly so. Librarians support faculty teaching and research; provide physical space for student collaboration, learning, innovation, and exploration; and often serve as trailblazers for trends in higher education, such as Open Educational Resources, educational technology, or scholarly communication. Less often, however, do librarians craft a narrative of the library as a true instruc-

tional partner with our own set of learning outcomes, threshold concepts, and curricular goals that can dovetail with an academic department's learning goals.

We observed firsthand that the *Framework* inspired deeper collaboration with Dr. Truffin because its vocabulary resonated with her feelings and goals about research. The *Framework* presents information literacy using vocabulary and outcomes in the same way that an academic department might present its subject matter. The *Framework* helps to position librarians as key partners for teaching conscientious and intentional research. While by no means a silver bullet, the *Framework* better communicates what librarians teach in a way that resonates with faculty members and presents a more nuanced reflection of the information landscape.

The positive response of faculty members to the *Framework* language, as described in the case study, inspired the library to view the *Framework* itself as a marketing tool. Rather than librarians working to sell the *Framework*, we find that the *Framework*'s language helps to sell the library to faculty members. To support conversations with faculty, we have created new promotional materials that directly utilize *Framework* language. These include a revised Information Fluency Plan website (figures 6.1 and 6.2), faculty resources handout, and a set of *Framework* posters for library instruction, which are detailed below and available under a Creative Commons license at http://library.campbell.edu/framework-for-librarians.

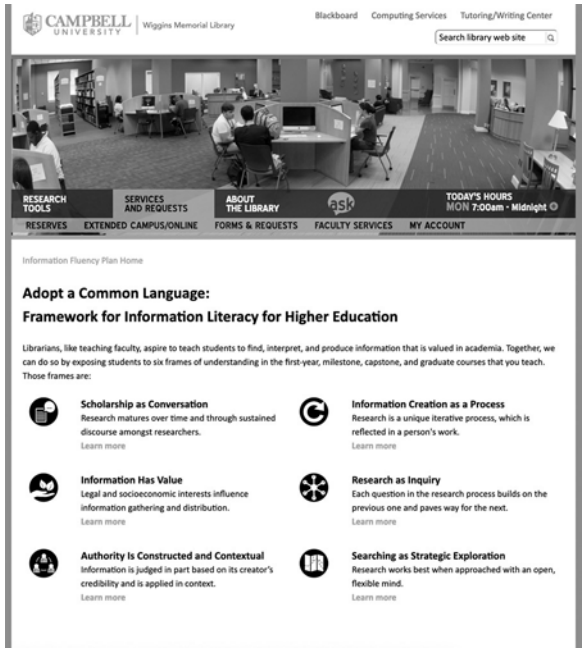

Figure 6.1. Information Fluency Plan website

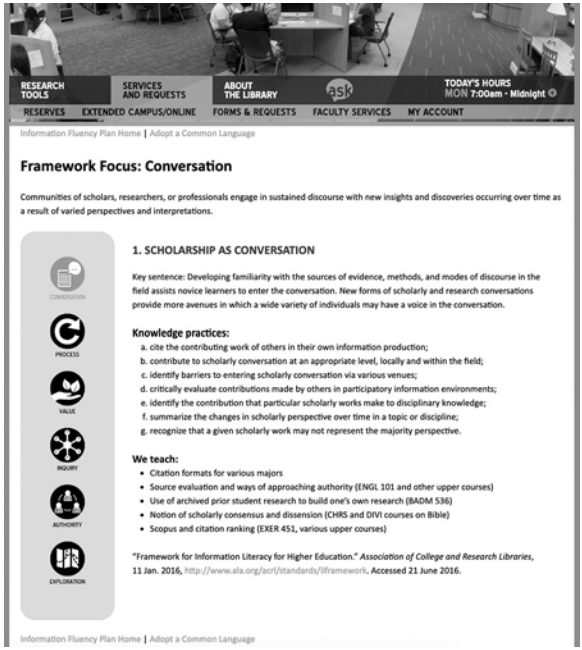

Figure 6.2. Information Fluency Plan website

Information Fluency Plan Website

Librarians began by revising our Information Fluency Plan webpage for faculty, which was introduced to faculty members at faculty orientation. We worked to condense the lengthy ACRL *Framework* document into a concise summary page that faculty members could quickly digest. This page provides a key, one-sentence description for each frame (figure 6.1), and invites faculty members to click in to read a list of knowledge practices and examples of how we teach to each frame (figure 6.2). Our goal was to preserve the strong theoretical foundations of the *Framework* while providing practical examples of how we teach this frame in a representative library session. The practice of aligning existing lesson plans with the new *Framework* reiterated, for us, that the changes introduced by the *Framework* were more about how we *talk* about information literacy instruction than how we *teach* it.

Faculty Resources Handout

The faculty resources handout (figure 6.3) details how the library supports faculty teaching and research and highlights the *Framework*, including a brief description of each frame with information about our library instruction program. The handout is included with some of the first informational materials new faculty members re-

Figure 6.3. Faculty Resources Handout

ceive from their library liaison. It is also distributed at faculty orientation and other venues.

Framework Posters for Library Instruction Classroom

As mentioned in the case study, some librarians and faculty members are directly incorporating *Framework* language into the way they teach the research process. To

Figure 6.4. Posters

support this instruction, we designed a set of six posters (figure 6.4), each highlighting a frame, to hang in our primary instruction room. Students are the target audience for these posters, which use graphics and three leading questions to convey the main idea of each frame.

Frame Icons

The library also designed a set of icons (figure 6.5) for the *Framework*. These icons were consistently used across *Framework* promotional materials and are also Creative Commons licensed.

CONCLUSION

Like many libraries, Campbell's internal conversations about the *Framework* started with the common observation that the *Framework*, especially in its complete form, feels overwhelming and is not deliverable entirely by the library. Not every faculty member will be as impressed by and engaged with the vocabulary of the *Framework* as Campbell's faculty partner in the English department. That said, in our experience the *Framework* does resonate with the needs faculty members see in students'

Figure 6.5. Icons

research. It also inspires enough individual faculty members that we believe there are partners at most institutions ready to get excited about the possibilities. The *Framework* fits with the broader goals of higher education institutions at this time: to create students with discernment and critical thinking skills. It also resonates with faculty members' own research and teaching objectives.

Even as it stretches our capabilities and aims, the *Framework* lays the foundation for a conversation about instructional partnerships. While the cornerstone of our instructional outreach is still relationship-building, the *Framework* has helped us to build new relationships and strengthen existing ones. It sells itself because it feels authentic. We are no longer advocates for library skills as much as advocates for students, and the *Framework* helps faculty to see how.

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II

CASE STUDIES OF INSTRUCTION USING THE *FRAMEWORK*

7

Teaching the *Framework* Using an Online Tutorial

Leanna Fry Balci and Peter J. Rich

Two common information literacy problems that librarians face are: (a) how to effectively train a large number of students in very little time and (b) how to keep information literacy instruction consistent across different instructors. This chapter presents a case study in which using the *Framework* helped to address these challenges at a large private university in the western United States.

Every year, approximately forty-seven hundred upper-division students enroll in the university writing program's required advanced writing course. Each of these students visits the university library for only one fifty-minute session during the semester. Originally, students were required to watch an online tutorial created using SMART technologies before attending their library sessions. This tutorial was noninteractive and Flash-based, so it was available only on certain devices. Learners were then asked to complete a 25-point multiple-choice quiz assessing only lower levels of learning like recall and recognition. Library sessions are taught by more than twenty different subject-liaison librarians, so achieving consistent learning outcomes has been problematic. Furthermore, the advanced writing requirement is taught by dozens of adjunct faculty. Each faculty member had different assignments, different learning outcomes, and different due dates. This inconsistency made it challenging for the library to meet students' information needs at the actual point of need.

In addition, advanced writing students are at varying points in their academic careers. These learners come from all majors on campus and have diverse educational interests and backgrounds. Although students are generally in their junior and senior years, many have delayed taking their advanced writing course until their final semester at the university and see little use for the class or library instruction. Approximately half of the students previously completed a research unit through their first-year writing class. Other students tested out of first-year writing or transferred

to the university after completing this requirement elsewhere and have had no previous formal writing or information literacy instruction from the university. Thus, learners have diverse experiences with both writing and the library and come with a range of skills.

In order to save precious instruction time, the library has offered a series of out-of-class, online tutorials. The introduction of the Association of College and Research Libraries' (ACRL) *Framework for Information Literacy for Higher Education* in 2015 was a perfect opportunity to reassess, reflect on, and rework the entire advanced writing curriculum and library session. As a result, the library has redesigned its information literacy course. The *Framework*'s focus on higher levels of learning, including creation and analysis, invites a different type of instructional experience than what was previously offered. According to the *Framework*, students, faculty, and librarians have more accountability in the learning process:

> Students have a greater role and responsibility in creating new knowledge, in understanding the contours and the changing dynamics of the world of information, and in using information, data, and scholarship ethically. Teaching faculty have a greater responsibility in designing curricula and assignments that foster enhanced engagement with the core ideas about information and scholarship within their disciplines. Librarians have a greater responsibility in identifying core ideas within their own knowledge domain that can extend learning for students, in creating a new cohesive curriculum for information literacy, and in collaborating more extensively with faculty.[1]

The recommendation to collaborate with other campus entities encouraged the library to partner more extensively with the university writing program "to redesign instruction sessions, assignments, courses, and even curricula."[2]

In order to make the library session more consistent for students and to address an actual information need, the library collaborated with the university writing program before redesigning the library experience. The first step in this collaboration was an introduction to and conversation about the *Framework* with the university writing program. This discussion resulted in a recognition that both the library and university writing are working toward the same goals for students' learning and accountability. Both parties acknowledged the need to develop a consistent curriculum across the approximately three hundred sections of advanced writing offered each year. This curriculum needed to focus on "threshold concepts, which are those ideas in any discipline that are passageways or portals to enlarged understanding or ways of thinking and practicing within that discipline."[3] After many discussions and through a review of composition literature, the university writing program's curriculum for the advanced writing course changed to be more discipline focused. The curriculum of the library sessions changed as well to support the new program. Advanced writing students are now required to write a literature review as their culminating assignment in their advanced writing course. This literature review is in their major discipline and gives students an information need when visiting the library.

Although the assignment changed, the time students spend in the physical library did not. During their fifty-minute sessions, students meet face-to-face with subject-liaison librarians. Each of these librarians must have advanced degrees in both library science as well as their disciplines. Students are matched with librarians based on their major subjects. In their face-to-face meetings, students discuss their literature reviews with their subject-liaison librarians.

In order to make the best use of this limited face-to-face time and to provide consistent instruction on the *Framework*, the library continues to use an online tutorial to flip the traditional classroom model. This decision was based on best practices according to library literature. In a literature review of online library tutorials, Alexandra Obradovich, Robin Canuel, and Eamon P. Duffy argue that a flipped model in the library setting is a "more effective use of classroom time."[4] Of 107 libraries researched in the study, they "were surprised to find only two examples that explicitly asked students to watch videos before attending a library workshop."[5] Because so few libraries were requiring outside learning modules to be completed by students and thus few appropriate third-party learning tools were available, the library decided to develop its own tutorial based on the new *Framework*. This tutorial gives students a solid background on the *Framework*'s core concepts before ever meeting with their librarians. Consequently, students are more prepared and can use their face-to-face time in the library for hands-on research and collaboration with librarians rather than point-and-click instruction.

REDESIGNING THE INSTRUCTIONAL MODEL BY USING THE *FRAMEWORK*

Instruction at the library had often fallen into a lecture-based model, which treats students as passive receivers of information. The *Framework*, however, invites students to become participants in the information process, developing "a renewed vision of information literacy as an overarching set of abilities in which students are consumers and creators of information."[6] The *Framework* recognizes the importance of activating these higher levels of learning. "A Meta-analysis of Experimental Research of Teacher Questioning Behavior" by Doris L. Redfield and Elaine Waldman Rousseau found that "gains in achievement can be expected when more higher cognitive than lower cognitive questions are used during instruction."[7] So instead of simply providing information through the new library out-of-class modules, as had been done in the past, it was important also to get students actively involved in applying and creating information as encouraged by the *Framework*. Obradovich, Canuel, and Duffy suggest that "research has consistently shown that active learning techniques applied within information literacy workshops positively impact student engagement and learning outcome."[8] The ability to include active learning, then, within the online tutorials would increase the effective use of time even more. Graham Gibbs describes active learning as "learning by doing."[9] Active learning is very

much a learner-centered rather than instructor-centered approach to education. At a basic level, the theory suggests that learners will understand concepts and remember them more easily if they have been actively involved in the learning process rather than passively waiting to receive the wisdom of their instructors.

Andrew Walsh and Padma Inala explore the importance of and advocate for active learning in their book *Active Learning Techniques for Librarians: Practical Examples*. They write that active learning leads to four important outcomes:

> Less emphasis is placed on transmitting information and more on developing students' skills. Students are involved in higher order thinking (analysis, synthesis and evaluation). Students are engaged in activities (e.g. reading, discussing and writing). Greater expectation is placed on the students' exploration of their attitudes and values.[10]

These outcomes are consistent with the aims of ACRL's *Framework*. The *Framework* is a set of core skills that learners should develop. It focuses on higher levels of thinking and requires student engagement and implementation. The frames are active, rather than passive, requirements. Ultimately, "learners take more responsibility for their learning" in such an active learning environment.[11]

DESIGNING A *FRAMEWORK*-BASED MODEL USING AN INSTRUCTIONAL DESIGN MODEL

Using the *Framework* as a guide, the library applied M. David Merrill's First Principles of Instruction to the design of the new online tutorials. Merrill's design model is centered on solving a real-world problem or task.[12] Similarly, the *Framework* is organized around six core concepts, or six core tasks or problems, that students should be able to address: (a) Authority Is Constructed and Contextual, (b) Information as a Process, (c) Information Has Value, (d) Research as Inquiry, (e) Scholarship as Conversation, and (f) Searching as Strategic Exploration.[13] The problem or task is the center of the First Principles of Instruction, and in order to complete the task or solve the problem, a learning environment should encourage four additional phases: activation, demonstration, application, and integration (figure 7.1).[14] In other words, any learning process must *activate*, or provide scaffolding to, previous knowledge that the learner might have; *demonstrate* to, or show, the learner new knowledge; provide the learner opportunities to *apply* that new knowledge; and finally, offer ways to *integrate* that knowledge into the learner's real-life environment.[15]

A tutorial on the *Framework* designed using the First Principles of Instruction, then, would need to include six modules, with each module centering around one of the *Framework*'s core concepts or tasks. Part of the module should activate the students' previous knowledge of the concept and demonstrate how that concept can be applied. Students should then apply the concept themselves through an interac-

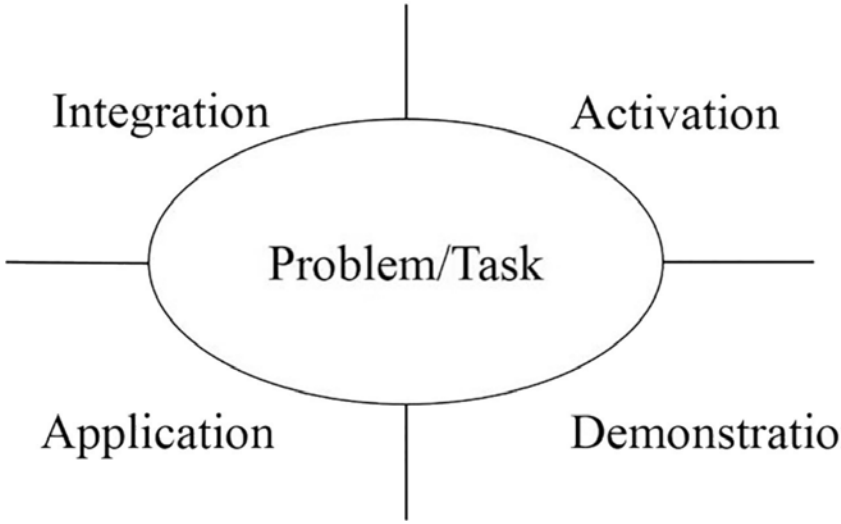

Figure 7.1. Merrill's "First Principles of Instruction" Design Model

tive activity integrated into the module. Finally, in the literature review assignment for their advanced writing course, students should integrate what they learned in the library into their university life outside the library.

Based on discussions with university writing faculty, the implementation of a new advanced writing curriculum, and a review of the literature, the library knew what it wanted to produce and why. The next step was deciding what actual content to include in the learning modules and how to build them.

ACRL has offered extensive training for the library community on the *Framework*, including presentations and webinars on implementing it. These webinars can be found on ALA and ACRL's YouTube channel (ALAACRL). However, the *Framework* was deliberately developed not to be prescriptive. Indeed, it says that "[n]either the knowledge practices nor the dispositions that support each concept are intended to prescribe what local institutions should do in using the *Framework*; each library and its partners on campus will need to deploy these frames to best fit their own situation."[16] The library needed to develop content that would specifically support the new curriculum created with the university writing program. Within each frame, the library chose a specific concept to focus on. For example, the frame Scholarship as Conversation was narrowed to a discussion of following a source's citation trail. The frame Research as Inquiry focused on finding the research gap. See table 7.1 for a complete breakdown of how the frames were narrowed for the online tutorial.

Table 7.1. Threshold Concept Modules

Unit	*Content*
1. Authority Is Constructed and Contextual	Assess Authority video; interaction identifying different levels of credibility
2. Information Creation as a Process	Evaluate Sources video; interaction evaluating different sources of information
3. Information Has Value	Synthesize Sources video; interaction identifying levels of synthesis
4. Research as Inquiry	Find the Gap video; interaction identifying different gaps in academic research
5. Scholarship as Conversation	Enter the Conversation video; interaction following a citation trail using Google Scholar
6. Searching as Strategic Exploration	Search Databases video; interaction developing keywords for searching

DEVELOPING THE INSTRUCTIONAL MODULES

Once the frames were narrowed down, the library was able to start developing the actual learning modules. Each of the six frames was its own module. The process was organized into three phases: (1) scripts, (2) prototyping, and (3) building. The first phase, script writing, took one frame and developed a narrative to teach it based on Merrill's First Principles of Instruction design model. The narrative activated the students' previous knowledge related to the frame, demonstrated it, and made recommendations for interactive modules that allowed the students to apply what they had learned. For example, figure 7.2 shows the frame Information Has Value in terms of the First Principles of Instruction. The script for this frame (figure 7.3) is based around the first three stages of the design model, with the literature review assignment as the final integration stage. All scripts were distributed to librarians in the instruction unit of the library for feedback on content, style, and usability. Revisions were made to the scripts based on this feedback before moving to phase 2.

Phase 2 was the prototyping stage of the modules. The prototypes included developing a style guide to create a consistent look, feel, and flow throughout the entire tutorial. The script was transferred to a storyboard that mapped out both the narrative and potential images and animations related to it. The storyboard also broke down the interactive element into possible application activities. Phase 2 included evaluation as well. This time, both librarians and students were invited to give feedback on the content, appearance, and usability of the modules. The prototypes were revised based on this feedback before moving into phase 3.

Phase 3 was the longest and most technically challenging phase, in which the modules were actually built. Choice of authoring software was based on a need for the modules to be both interactive and usable on a variety of devices (e.g., computers, tablets, smartphones). Both Articulate Storyline 2 and Adobe Captivate have

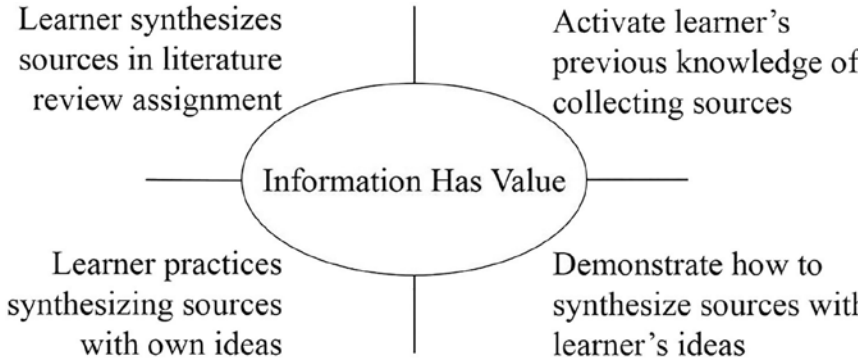

Figure 7.2. Information Has Value module in terms of Merrill's "First Principles of Instruction" Design Model

Threshold Concepts: Information Has Value

Narrative	Visuals
Once you have found information, you need to make connections between your sources. The goal is to synthesize your sources to find common themes between them.	*I want your team to be free to use your creativity, but maybe we could do something like three vague papers coming together to make one paper?*
Synthesizing does not mean just quoting, summarizing, or even comparing sources.	*From the new paper, maybe words can pop out like* quoting, summarizing, comparing. *I don't want to stymie your creativity, but this is an idea.*
Synthesis requires you to think critically about your sources, to focus on ideas rather than quotations, and to use sources to support your own ideas.	*Some virtual that represents ideas? A light bulb coming from the paper?*
Once you have found connections, you can organize your paper in a meaningful way. Rather than organize your paper by source, synthesizing allows you to organize by idea and, most importantly, to add your own voice and ideas to the conversation.	*Virual of rearranging a paper that says Source 1, Source 2, etc. into idea 1, idea 2. I am very open to creativity here.*
Take a look at these four student papers. The highlighted areas show how students have integrated different sources into their papers. Click on the paper you believe most successfully synthesizes sources.	*If the student clicks on A:* Paper A is correct. This student has integrated multiple sources into the paper, but the majority of the paper is the student's own voice and ideas; *B:* Paper B is incorrect. Although the majority of the paper is the student's own voice and ideas, the student has only used one source for support; *C:* Paper C is incorrect. Although the student cites multiple sources in the paper, the student does not contribute enough original thought; *D:* Paper D is incorrect. The student uses only one source and does not include original ideas. *It would be nice if the student can click multiple times if they want, but I'm not sure how to move the tutorial forward if we do that.* *Here is a visual from McGregor. Do you think we can use it? Or replicate something similar?* 
Here are passages from three different sources. Read these passages and brainstorm two different ideas that connect these sources. Write the ideas in the space provided. Then move paragraphs from the sources that you believe support your two ideas.	*This is where things get tricky. Is there a way to show the three sources, provide a place for students to type two ideas, which we could score based on keywords, and then move paragraphs under those ideas? At the end, the students would have to press a submit button or something similar to indicate they are finished. I feel like maybe just giving points if they do the activity and move information from more than 1 source to the different ideas.* *Three sources: See Below, and please let me know if you think these sources invite critical thinking.*
You have completed the tutorial on synthesis, but finding connections is just the beginning. The next step is to add your own ideas and voice to the conversation.	*Maybe this (or something similar) can be a pop up when the student submits the above interaction.*

Figure 7.3. Script for Information Has Value module

these capabilities. Articulate Storyline 2 was selected due to previous experience with the software, but Adobe Captivate had similar capabilities and could easily have been selected as well. The activation and demonstration of each frame were developed as videos using Adobe Illustrator and Adobe After Effects. Figure 7.4 illustrates the video element of the Information Has Value frame. This video moves seamlessly into the interactive element, where students are asked to apply what they learned. Students interact with the information through typing, clicking, and moving content. For example, the interaction for the Information Has Value frame (figure 7.5) asks students to read several texts, develop their own ideas based on the texts, and then support their ideas using the texts. The embedded interactive element was built with Articulate Storyline 2. Phase 3 of the modules was tested by librarians, students, and advanced writing instructors. Their feedback was used to revise the modules. For example, the interactive element for the frame Scholarship as Conversation asks students to perform a search in Google Scholar within the player. Some students found the directions to be confusing, so these were revised in the second iteration.

The building of these modules was not a linear process. The frames were in various phases throughout the project. For example, when the first two frames were in phase 3, building, the last two frames were in phase 1, scripting (table 7.2). Stag-

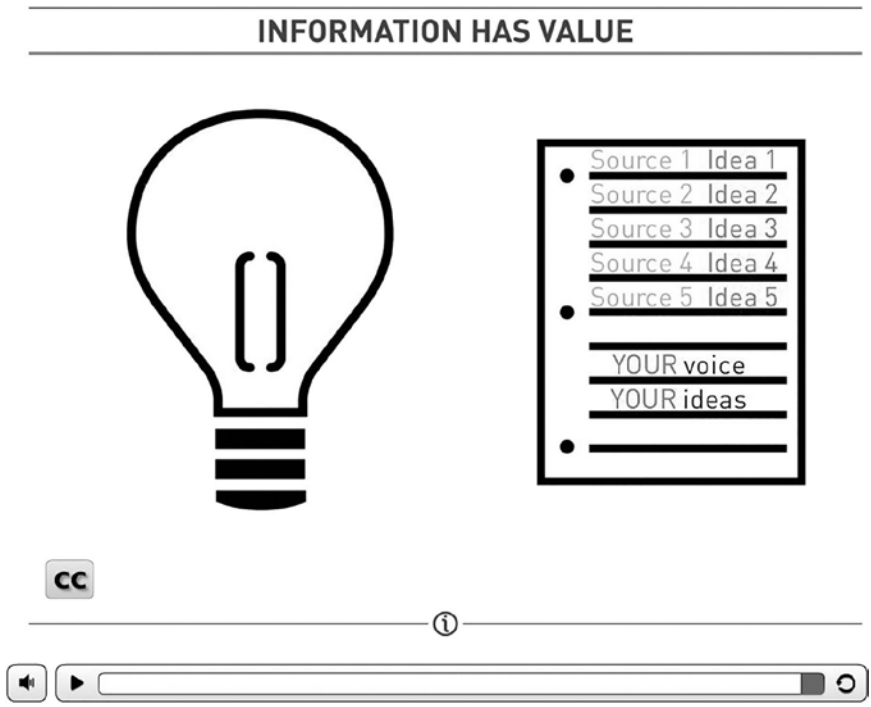

Figure 7.4. Video instruction of the Information Has Value module

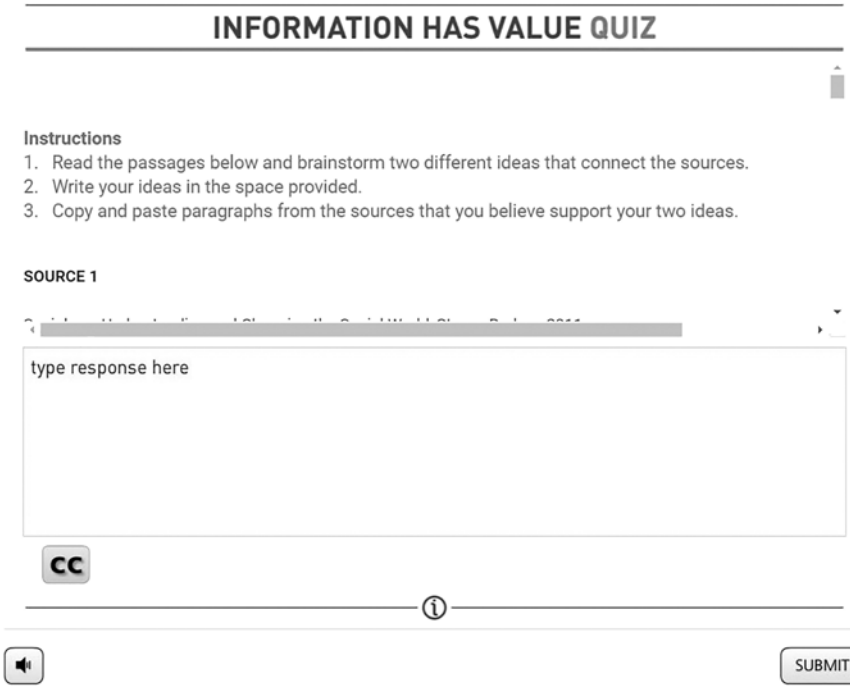

Figure 7.5. Interactive element of the Information Has Value module

gering the development of each module allowed for the most effective use of time and resources. It also helped improve the quality of the project. For example, the formative assessments created while developing frame 1 were applied to the development of subsequent frames. The style guide developed in phase 2 for frame 1 was used throughout the project; the template built in phase 3 for frame 1 was used to build the remaining modules. Each of the frames is housed in a single player (figure 7.6) that can be imported either as a Tin Can API or a SCORM into a learning management system.

Table 7.2. Staggered Module Development

Frame	*Phase 1 (scripting)*	*Phase 2 (prototyping)*	*Phase 3 (building)*
1. Scholarship as Conversation			
2. Research as Inquiry			
3. Information Creation as a Process			
4. Authority Is Constructed and Contextual			
5. Searching as Strategic Exploration			
6. Information Has Value			

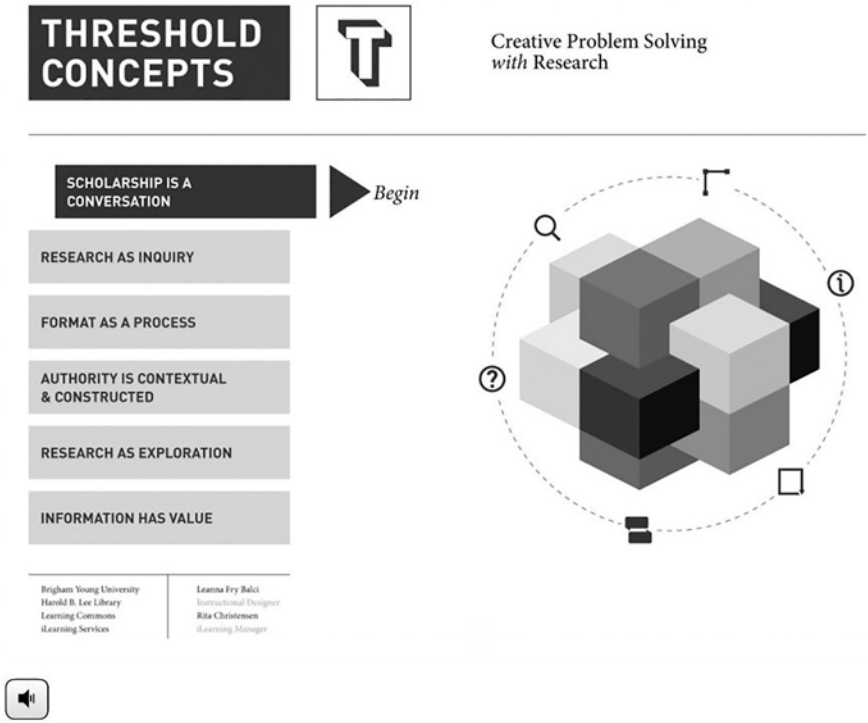

Figure 7.6. ***Framework*** **tutorial authored using Articulate Storyline 2**

When the production, formative assessments, and revisions were complete, the *Framework* tutorial was implemented throughout the advanced writing program. Assessment continued at this stage. The library asked for and received feedback from students, instructors, and librarians on the modules during and after their implementation. This feedback informed updates and revisions to the modules for subsequent semesters.

The entire design process took approximately six months to complete and required the efforts and skills of a content expert, instructional designer, product manager, and several talented student employees. Costs included purchase of the software as well as wages. Most of the actual building of the product was completed by part-time student employees, who were essential to the success of the project. The student employees brought technical expertise and creative ideas to the product and kept costs down versus using full-time employees or outsourcing the project.

Developing the new *Framework*-based curriculum and tutorial was an authentic but "messy" process, which is common to design processes.[17] Technically, the biggest challenge was incorporating the reporting feature within the learning management system. Several tweaks at the code level were necessary to receive full responses to

the open-ended questions. These questions, though encouraging higher levels of thinking, also have to be scored manually and require additional time of the grader. In addition, the process of integration with the composition faculty has not been seamless, with some choosing not to require the tutorials or being resistant or slow to adopt the literature review assignment.

EVALUATING THE *FRAMEWORK*-BASED CURRICULUM

Students are evaluated during their interaction with the online tutorial, which takes approximately one hour to complete. Each frame's interactive element allows students to apply what they have learned and to show their proficiency with the targeted core competency. Immediate feedback is delivered after each interaction so students can evaluate the strength of their answers (figure 7.7). The interactions are recorded and reported through Storyline and can be incorporated into the university's learning management system. Advanced writing instructors and the library receive results of these evaluations as a summative assessment. These results inform changes that need to be made to the tutorial as well as the face-to-face instruction. In addition,

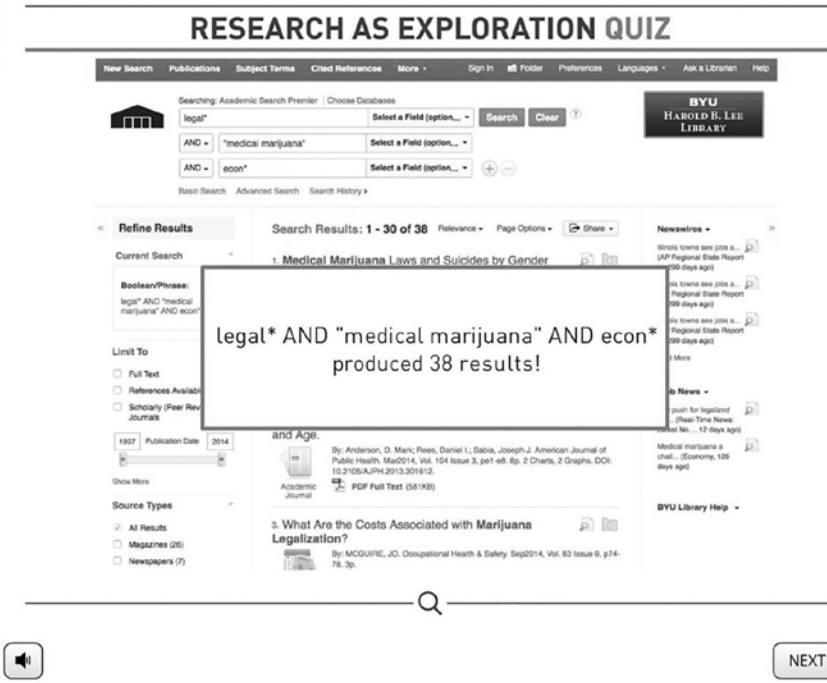

Figure 7.7. Immediate feedback on student responses

the modules can be viewed independently and reviewed as point-of-need tutorials for the students.

As part of a study on teaching the *Framework* to English language learners, the module Scholarship as Conversation was tested with both native and nonnative English speakers to evaluate the effectiveness of the instruction.[18] Students' navigation of the module was tracked for both time and accuracy using specialized software. After the module's video instruction on following a source's citation trail, students were asked to find an article, discover another article based on that source's references, and then locate a third article that cited the original source. The results of this study found that forty-six native English speakers were able to accurately follow a citation trail after receiving instruction through the online module; ninety-five nonnative English speakers followed the citation trail with an accuracy of 67.37 percent. A possible solution to this discrepancy is including language subtitles in the tutorial.[19]

The library has also gathered empirical evidence of the tutorial's effectiveness. Librarians report a marked difference in student preparation and understanding of the *Framework* between those students who have completed the tutorial and those who have not. Overall, subject-liaison librarians describe more productive face-to-face sessions that focus on students' specific research needs. Students come to sessions with higher-order questions rather than procedural ones. Students report higher satisfaction with their library sessions because rather than point-and-click instruction they experience more one-on-one interactions with subject-liaison librarians that focus specifically on their individual writing assignments and information needs. Advanced writing instructors have responded positively to the modules and their content. They report receiving more academic and research-based writing assignments. Based on this feedback, incorporating the modules has helped standardize the experience students have with the *Framework* and the library and has made the limited time in face-to-face sessions more focused and effective.

The most rigorous evaluation of the curriculum is scheduled for next year. Every four years, the university assesses the advanced writing general education requirement. This assessment is done through an analysis of student research papers. The upcoming assessment will compare research papers written using the previous curriculum with those written using the new *Framework*-based literature review curriculum. The results of this evaluation will help the library and university writing program to improve their integration of the *Framework* into the curriculum.

CONCLUSION

Incorporating an online tutorial about the *Framework* has not changed the constraints the library faces in terms of its information literacy instruction. The library still teaches large numbers of students in a limited amount of time. The out-of-class tutorial, however, has made it possible to introduce the *Framework* to these students

in a consistent manner while more effectively using face-to-face instruction time to integrate the *Framework* into the students' writing assignments.

The *Framework* invites critical thinking and creative problem solving. Its focus on core competencies is a natural fit with Merrill's First Principles of Instruction design model. Using this model allowed the library to take a problem-based approach to learning, applying, and integrating the *Framework* into student library sessions and academic work. The model calls for the activation, demonstration, application, and integration of each frame. The tutorial gives students background information on each frame, a demonstration of how that frame can be implemented, and the opportunity to apply the frame and receive feedback. However, as discussed previously, a stand-alone tutorial is not enough. Learners must see a need for the information delivered in the tutorial and have the opportunity to integrate the *Framework* into their schoolwork. For the tutorial to be successful, the library had to collaborate with the university writing program and advanced writing instructors to time the delivery of the tutorial and subsequent face-to-face library sessions to the required literature review paper. Because the advanced writing students must write a literature review in their fields, they have a specific, real-life information need. The tutorial and library session are timed to fill that need. This case study has found that using an online tutorial to teach the *Framework* is one way libraries can successfully incorporate it into their instruction.

NOTES

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4. Alexandra Obradovich, Robin Canuel, and Eamon P Duffy, "A Survey of Online Library Tutorials: Guiding Instructional Video Creation to Use in Flipped Classrooms," *Journal of Academic Librarianship* 41, no. 6 (2015): 752.
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14. Merrill, "First Principles," 43–59.
15. Ibid.
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8

Designing a First-Year Foundation Program around the *Framework*

Brianna B. Buljung

Between fall 2016 and fall 2018, the teaching and learning librarian at the Colorado School of Mines (Mines) Arthur Lakes Library developed a scattered collection of one-shot instruction sessions into a coherent first-year foundation information literacy program. Three partnerships between the library and core courses were organized around the Association of College and Research Libraries' (ACRL) *Framework for Information Literacy for Higher Education* to provide students with a strong foundation in basic information literacy skills and theories. The program consisted of Design I, focusing on Authority Is Constructed and Contextual; Nature and Human Values (NHV), focusing on Search as Strategic Exploration; and CSM 101, focusing on Scholarship as Conversation. Program successes included leveraging existing relationships with academic departments, high levels of participation from partner course faculty, and lessons that complement each other without unnecessarily replicating content. Challenges that persist include maintaining partner relationships, making the best use of limited staffing resources, reaching transfer students, and providing a consistent experience for first-year honors students. In addition to a reflective examination of the successes and challenges in developing the Mines program, this chapter provides insights into identifying partner courses in the core and tips for considering the first-year foundation holistically. Using lessons learned from the Mines experience, this program can be adapted to the specific needs of other colleges and universities.

BUILDING A PROGRAM AT MINES

The first-year instruction program at Mines developed organically. Librarians at Mines have been teaching one-shot bibliographic instruction sessions to sections of

NHV and Design I course for several years. Over time, instruction evolved from largely lecture based to more active sessions with limited hands-on practice by students. At the beginning of fall 2016 semester, the program consisted of a required lesson in Design I as well as one-shot lessons scheduled at the request of individual NHV and CSM 101 instructors. The Design I lesson consisted of a brief lecture on scholarly and authoritative sources followed by an activity evaluating sources. The focus on source evaluation was at the request of faculty who observed students struggling with the concepts.[1] The lesson was taught twenty-two to twenty-four times over the course of a week each semester. In spring 2017 the lesson was redesigned into a flipped lesson consisting of a Canvas module and team meeting with a librarian. All students in the class complete the lesson for participation points each semester. The NHV lesson varies from a fifteen-minute visit to a full class session or more depending on the needs of each instructor. It focuses on database searching and citing sources. This is the most traditional of the information literacy lessons. It is consistently taught to students in 50–75 percent of course sections each semester. The CSM 101 lesson, initially developed in partnership with a humanities professor, examined the role of research in scholarly communication. It was an optional lesson designed to be taught by course instructor or the instruction librarian. Prior to fall 2017, the lesson was required for all forty-six sections that term. Since then, the lesson has been in flux due to course revision.

Throughout its history, information literacy instruction at Mines was taught by up to ten librarians with varying levels of experience in the classroom. While few librarians at Mines have teaching in their job description, most of the team participates in large-scale instruction such as Design I. Lessons were designed to the minimum comfort level of all instructing librarians while providing a uniform experience for students across sections. It is packaged, providing librarians with a lesson plan and prepared materials. Librarians can then infuse their own personalities and teaching styles into the outlined lesson. Prepackaging materials garners more participation from librarians who are willing to teach but too busy to help design lessons.

The most consistent criticism of library instruction, especially at the first-year level, was the seemingly repetitive nature of lessons. Students would complain that they already had "the library lesson" in one course and saw no need to visit the library again. We were not conveying to faculty and students that each lesson is different and tied to course learning goals. While this continues to be a criticism by some students, designing the program around the *Framework* has clarified the differences between lessons in the foundation program. Lessons for each course are designed around clearly articulated learning outcomes, which are tied to a relevant frame and the instructor's goals for the course. Detailed goals and specific learning outcomes distinguish each lesson as distinct and help librarians communicate with faculty and students. Every lesson Mines librarians teach is planned using backward design, starting with learning outcomes, so the lesson focuses on the concepts students need to master.[2] Assessment and activities are added to help students achieve the learning outcomes.

By the end of the Design I lesson, students should be able to recognize markers of authority related to their topic, understand how context plays a role in authority, and define the terms scholarly and authoritative. Focusing on the Authority Is Constructed and Contextual frame, this lesson is designed to help students recognize the contextual value of sources beyond scholarly, peer-reviewed articles. Based on those goals, the assessment is a short quiz in the Canvas learning management system and activities are a module in Canvas and a thirty-minute team meeting with a librarian. While the NHV lesson can vary slightly, the learning outcomes for the basic lesson are that students will be able to navigate the library catalog and databases, identify search terms related to their topics, and formulate and execute a series of searches by refining results and revising terms. The lesson is designed around the Scholarship as Strategic Exploration frame. During the lesson, students complete a database peer-teaching activity and a minute paper assessment.[3] Finally, in CSM 101 emphasis is on the Scholarship as Conversation frame, and students should be able to describe how scholarship is a conversation that they can contribute to, use a research article to lead to other pertinent research, and identify useful tools and services in the library. The lesson focuses around an activity tracing conversation through citations and wraps up with a minute paper assessment. This lesson also includes a twenty-minute tour of the library.

Whether to create a stand-alone course or embed in partner courses is one of the most important considerations in developing an instruction program. Placement is especially key in developing a sustainable program, but it is often dictated by local circumstances out of the instruction librarian's control. Before deciding to create a credit-bearing course, librarians should understand the course-approval process on campus. Find out who approves new courses and if your course can be "owned" by the library or if it must live in a degree-granting department. Determine if it should be an elective or a required course and where it would fit into a student's course sequence. Embedding your program in a series of existing courses can circumvent some institutional red tape. Also, "the literature proposes that information literacy courses have far more impact and are seen as more relevant by students if they are subject specific, embedded into the curriculum and delivered at the time of need."[4] The program is dependent on the stability of the partner course and relationships with course instructors, but would not go through formal approval processes. At Mines, the decision to embed in existing curriculum was dictated by the partnership history described above and the information needs of STEM students. Engineering students in particular need to situate their research within the context of engineering design, in which "students need to understand how to incorporate a wide range of sources, including standards, patents, industry information, reliable web resources, and trade literature."[5] At Mines, information literacy lessons, even in non-STEM courses, make connections to the information needs our students will have as professionals.

Curriculum fatigue remains an essential consideration when modifying the core curriculum at Mines. When we considered the credit-bearing option, we felt strongly

that the course should be required. However, Mines students already have lengthy core requirements, and course scheduling can extend a student's degree by a year or more if a foundational course is missed or must be retaken, requiring five or six years to graduate. Fitting into library and institutional strategic goals is essential when building an information literacy program. Claire McGuiness argues that libraries should "focus and direct their energy towards the development of sustainable collaborations that are mandated from the top down and resistant to changes in personnel and other environmental factors."[6] The university has a strategic goal to create a distinctive first-year program that will set us apart from peer institutions. In the latest strategic plan, library staff made expansion of the information literacy program a strategic goal.[7] Accounting for these initiatives, the team utilized momentum and resources that would otherwise be directed to other projects.

Finally, sustaining the program in the long term requires careful consideration of staffing limitations at Mines. There is one instruction librarian, a few others have some instruction in their job description, and almost all librarians help with approximately 120 Design I student team meetings each semester. In fall 2017, almost every member of the staff led tours for students in 46 sections of CSM 101. While most librarians enjoy engaging with students through the program, it is hard to commit when they are busy with other responsibilities; therefore, the program emphasizes a strong partnership with specific classes and learning goals. As Barbara Junisbai and colleagues argue, "faculty-librarian collaboration on assignment and syllabus development, followed by one or two strategically placed class sessions, produced the greatest gains."[8] Instead of partnering in several courses or covering every frame, the team identified three courses that best lend themselves to information literacy concepts while balancing current staffing limitations.

SUCCESSES OF THE PROGRAM

Developing over the past five semesters, the program has been largely successful, providing Mines students with the skills to succeed at research as they begin their academic studies. Program successes include high partner course participation, adapting to course changes, avoiding overlap between lessons, and building on success to expand relationships with partners.

One significant success has been a high level of participation from the partner courses. Each semester, Design I requires student teams to complete the Canvas lesson and their librarian meeting for participation credit. Several NHV faculty consistently schedule the information literacy lesson each semester. The program depends on this buy-in from faculty. Course instructors are supportive semester after semester because they see the connection between the library-taught lesson and their course goals. As Sung Un Kim and David Shumaker argue, "information literacy should be embedded in courses that offer assignments and activities that reinforce the skills taught and give students the opportunity to apply them."[9] The NHV lesson

is typically taught in conjunction with a research paper assignment, providing students with the opportunity to practice new skills immediately. Some faculty reinforce the lesson with a second class in the library, in which students have structured time to work on research with access to their instructor and a research librarian. With a *Framework*-based focus, the information literacy lesson is enough of an added value for course faculty to include it in their lesson plan each semester.

Unless information literacy is mandated at the institutional or departmental level, consistently garnering high faculty participation can take time. Often, the first step is for the librarian to "prove" the worth of the instruction by teaching one-shot lessons. A successful lesson can lead to larger discussions of students' information literacy needs within a department's curricula. Another route is to seek out faculty who already understand the value of teaching information literacy. These instructors are proactive in scheduling lessons for their courses because they have seen success or feel the skills are important. Look for faculty who are "sensitive to the difficulties experienced by students in doing research, and could sympathetically relate it to their own personal struggles as students."[10] They can advocate with other faculty teaching that course and in their larger department. The library's relationship with NHV has strengthened using this approach. Faculty who value the research lesson recommend it to other instructors, typically those seeking advice when teaching the course for the first time. These word-of-mouth referrals are a sign the lesson is impactful. Unless the information literacy lesson is required, as it is with Design I, it may be difficult to reach 100 percent faculty buy-in, but over time, personal relationships and word-of-mouth promotion will increase faculty support in a given course.

Adaptation and constant communication are the secrets to a long-term information literacy relationship. As departmental goals and educational best practices change over time, the content of individual courses may change as well. As a partner course is updated, librarians need to be open to adapting their lessons to revised learning outcomes. In the optimal relationship, the librarian is part of the curriculum design team from the beginning. As librarians at St. Mary's College of Maryland learned, "These partnerships were the collaboration ideal: faculty and librarians working together to shape assignments and classroom experiences."[11] The current Design I lesson began as a discussion about the existing lesson and the department's goals for the course moving forward. Over the course of several semesters, it has evolved into the type of collaborative relationship described at St. Mary's. Design I faculty were interested in flipping some lessons to free up class time for work on the students' semester-long group project. The library team was dissatisfied with the information literacy lesson in its current one-shot format. The library's lesson was an ideal candidate for flipping because the new format better matched the faculty goal of providing each design team with specialized support. Following a pilot in spring 2017, the lesson is continuously improved in small ways, from finding the correct placement within the schedule to the ideal scheduling of meetings for participating librarians.[12] To adapt successfully, librarians must regularly communicate with

faculty about changes made to the course and how the information literacy lesson fits into the bigger picture.

By focusing around the ACRL *Framework*, the program at Mines transitioned from a disparate set of one-shot lessons into a cohesive program. Considered individually, each lesson runs the risk of becoming repetitive. The librarian can fall into the habit of repeating key databases or search techniques, and students seeing librarians in multiple courses receive that redundant material. Some repetition is necessary, including research guide location and how to get further research help. Duplicating core material, such as how to search the catalog, across multiple foundational lessons can make students lose interest and can take time from other important concepts. When the program is considered holistically, the librarian trusts each lesson to do its job, safely skipping material taught in one lesson because it will be taught elsewhere. For example, evaluation of sources is mentioned briefly in the NHV research lesson. Students are asked to remind the class about the attributes of a scholarly article. The concept is not covered exhaustively because it is the focal point of the Design I lesson. The teaching librarian can focus precious time on search strategies and research habits tied to the *Search as Strategic Exploration* frame.[13]

Each partnership, embedded at the point of need in a particular class, helps students develop a specific skill set. The *Framework* provides librarians with the language for differentiating between the three lessons when speaking to faculty and students. Lessons are complementary; students who have completed one or more of the partner courses in fall semester can apply their new skills to courses taken in the spring. Faculty turnover is inevitable; adjuncts move on and permanent faculty rotate through teaching other courses. Having a holistic understanding of the lessons and a plan for conveying information to course instructors can mitigate issues caused by faculty turnover. As Glenn Johnson-Grau and colleagues found, "[I]t is important to take every opportunity to reinforce the information literacy message and keep informing faculty about the history and process."[14] When the program is made of distinct, complementary lessons, it is easier to get student buy-in as well. In their study, Kim and Shumaker found that students were less likely than faculty and librarians to find library instruction effective.[15] They argue, "The fact that students had significantly lower opinions about the value of information literacy reinforces the view that students will not be receptive automatically."[16] Students need to be explicitly told the intended value of each lesson. They also need to be reminded that, while they may have seen the librarian already in another course, this is a distinct and important lesson.

The greatest indication of the program's success is the expanding relationship that is developing with the Design I and Nature and Human Values courses. Flipping the Design I lesson led to a research partnership with the lead course instructor that examined the effectiveness of the flipped lesson and is now exploring how to ensure students retain skills learned early in the semester for use in later projects. The relationship also developed to include a train-the-trainer element in the form of a brief update for course instructors on IEEE citing style at the fall semester

kickoff meeting. Likewise, the NHV partnership has developed beyond delivery of the information literacy lesson. Each semester, research librarians, course faculty, and writing center tutors partner to host a research pizza party. Students can stop by the event for help on any aspect of their research projects. They get assistance and research support in a festive, relaxed environment. Also, the initial search lesson for NHV ends with a minute paper assignment asking students to identify the most important thing they learned and any items that are still confusing. The librarian follows up with the instructor on confusing aspects and any questions asked by the students. This type of follow-up helps the librarian to further develop their relationship with both faculty and students.[17] Initial success with these lessons, and a better understanding of the library's information literacy expertise, have helped Mines librarians develop a deeper, richer collaborative relationship with these two partner courses.[18]

ADDRESSING CHALLENGES THAT PERSIST

While the first-year foundation program has been largely successful over the past couple years, some aspects of the program are in flux and other challenges persist. At the course level, work continues to sustain relationships with partner courses as goals change at the departmental and university levels. The relationship with CSM 101, a fundamentally different course than the other two, has been difficult to maintain during ongoing course revision. Balancing the program with the library's limited staffing is likely to remain an ongoing challenge for some time. The biggest challenge of the program in its current form is addressing the needs of honors and transfer students who may miss one or more of the foundational courses. Lessons learned by the Mines library can help other libraries to avoid similar problems when designing a first-year foundation program.

Maintaining relationships as curriculum changes is a perpetual challenge for information literacy programs embedded in the curriculum. Sometimes the relationship is easy, because course and library goals are complementary and faculty are favorable to the need for information literacy instruction. The third pillar of the Mines first-year foundation program, CSM 101, has been a more difficult partnership to maintain over the past several semesters for a variety of reasons. From a library perspective, the course is different because it has been administered by a student support unit rather than an academic department. As a student success and orientation course, it was designed to introduce students to many important features of life on campus, focusing on a different topic each week. While it is important for the campus library to be discussed within this context, fitting the course into a program designed around the ACRL *Framework* has been more difficult. Fall 2017 was the only semester the information literacy lesson was required for all course sections. This lesson focused on the Scholarship as Conversation frame to avoid repetition with Design I and NHV. Without a single academic thread woven through the class, it was more

difficult to tie the stand-alone library lesson to other coursework. Students were introduced to the concept in class but had no readily available assignment on which to practice their new skills. Beginning in fall 2018, the curriculum for CSM 101 has been under review, and positioning of the library's lesson within course curriculum remains uncertain.

Establishing and maintaining this teaching partnership has been more difficult and less consistent than Design I and NHV for all the reasons the other two lessons have been so successful. Before and after that one semester of required CSM 101 participation, the information literacy lesson had mixed success due to inconsistent buy-in from faculty. Before 2017, when the lesson was one of several optional lessons, faculty and students in each section could forgo it in favor of other lessons. Also, the lesson was packaged to be taught by either a librarian or the section faculty, making it difficult for librarians to know how well students received the lesson. Perhaps most importantly, it is difficult to envision the lesson in its current state as playing an important part in the holistic program. Information literacy is most effective when taught at the point of need and followed by the opportunity to practice new skills.[19] As described above, CSM 101 is not currently designed to provide students with those opportunities. Unlike the interplay between source evaluation in Design I and research skills in NHV, the Scholarship as Conversation lesson is independent. Students do not necessarily build on that lesson in their other coursework. The CSM 101 relationship has taught Mines librarians valuable lessons about proper placement of information literacy concepts within the curriculum. Currently, it is better for the library to focus on teaching the Design I and NHV lessons well. Through discussions with CSM 101 course faculty about their new goals for the course, the information literacy lesson can be adapted to more appropriately fit. While student engagement with the library through information literacy is important, lessons need to be well constructed and timely to avoid undue strain on staff resources and to minimize student perception of redundancy.

One of the most difficult changes persisting for the Mines first-year foundation program is maximizing limited resources and balancing instruction with other library projects. While Mines librarians would agree that information literacy instruction is important, not all librarians are able or inclined to participate in teaching lessons. Throughout its history, the Mines instruction program has been focused on designing lessons that can be taught by librarians of various skill levels. The lead instruction librarian oversees the development of teaching partnerships and teaches the majority of lessons throughout the curriculum. Mines librarians are functional specialists, because the historical makeup of the library and the nature of the curriculum makes subject specialization a secondary consideration. It would be very difficult for every librarian on staff to have STEM specialization, so each librarian leads a functional area, utilizing the support of other staff when needed.

When a lesson, such as Design I, requires participation from the majority of the librarians on staff, it has to be designed to ensure occasional instructors can still be

successful. As Kim and Shumaker learned in their study, "Library leaders should take care to select staff for embedded instructional assignments who, at a minimum, have been trained in pedagogical skills—and require such training of staff who do not come with those skills."[20] The current Design I lesson is so successful in part because most of the librarians feel comfortable meeting with a small group of four to six students. It is more like a group reference interview than a "sage on the stage" instruction session. The instruction team can leverage the skills of more librarians to teach the lesson. This current arrangement works well for a single course but has not been without issue, especially the semester when Design I instruction overlapped with the Colorado Association of Libraries conference attended by several librarians. Relying on the willing participation of most of the staff is not a viable long-term staffing model for a successful program. The library will eventually need to add additional librarians—namely, a first-year experience librarian—to maintain the lessons in their current state over the long term.

While the vast majority of students take both Design I and NHV, some students miss one or both courses. Occasionally students, typically those transferring into Mines, have already completed a composition course similar to NHV. Students coming from other engineering programs can petition to opt out of Design I if they have completed a similar course. When students miss a portion of the foundation program they may not learn information literacy skills they will need later in their academic career. The first-year foundation is the most developed portion of the Mines information literacy program. The library team has plans for developing a scaffolded program around the *Framework*, but that program currently consists of the foundation and a scattering of one-shot lessons in the upper-class curriculum. When the program is more comprehensive, transfer students will be able to learn some information literacy skills in early courses within their major. Another student population that could miss out on portions of the foundation are students in the Mines first-year honors program. Students in the program take a single full-year course that substitutes for their Design I and NHV requirements. The library has inconsistently partnered with this course over the past few years, at times teaching a single one-shot lesson similar to the NHV lesson in the spring semester. The inconsistent information literacy instruction received by honors and transfer students is an issue that still needs to be addressed by the instruction team moving forward.

Although the Mines library continues to struggle with some aspects of implementing the first-year foundation program, it has largely been successfully implemented over the past few semesters. Using the ACRL *Framework* as a guide, the program has successfully implemented information literacy lessons in two courses, while discussions on the adaptation of the Scholarship as Conversation lesson continue in the third. Focusing on three first-year core courses, the library has a maximum impact on student learning without straining limited staff resources. The Mines program can be adapted for use by other institutions. Selectively choosing partner courses, emphasizing a particular frame with each set of learning outcomes, and accounting

for local needs, such as departmental and university initiatives, can help an institution to be successful. Certain aspects of the program will continuously need attention, especially maintaining good communication with course instructors. However, emphasis on the concepts associated with the three selected frames enables librarians to structure that conversation around the complementary nature of the lessons and the purpose of the foundation program as a whole.

ACKNOWLEDGMENTS

Thanks to Lisa Dunn for information on the development of the instruction program over time. Thanks also to Lisa and to Emily Bongiovanni for providing editorial feedback on the chapter. A very special thanks to the Mines librarians who tirelessly participate in information literacy instruction each semester.

NOTES

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9

The *Framework* as Pedagogical Tool: Teaching Source Integration

Gina Calia-Lotz

As the instructional services librarian at Harford Community College in Bel Air, Maryland, I occasionally survey faculty regarding their satisfaction with our library's information literacy program and the skills they believe their students are most lacking when it comes to conducting research. Over and over again, I hear from faculty that, for the most part, after receiving library instruction their students were effectively *finding* high-quality sources, but they were not *integrating* these sources in the text of their papers. This deficit is often cited; as noted in a 2018 *College & Research Libraries* article, faculty often find that their students "could locate peer-reviewed, scholarly sources but struggled to synthesize both that material and their class readings."[1] In other words, the real problem is figuring out what to *do* with sources once students have found them. Indeed, one of the things the Association of College and Research Libraries' (ACRL) *Framework for Information Literacy for Higher Education* aims to do is to nudge librarians beyond the primary role of teaching students "source acquisition," often assessed by a review of students' bibliographies,[2] and into a more complex realm of information literacy instruction that includes the use of information in "creating new knowledge."[3] In particular, librarians can and should play a larger role in helping to teach students how to integrate information from outside sources into their research papers. As such, the role of librarians is developing to "be a little less about pushing databases and their content at students, and a little more about helping students conceptualize what to do with the information that is so readily available."[4]

In July 2015, I approached the lead instructor for English 101 (English Composition), as well as the manager of the tutoring center at my institution, to brainstorm how we could better teach students to use outside sources to develop their theses and their arguments in their research papers. I shared with my colleagues the then–newly published *Framework*, focusing in particular on the frames Scholarship as Conversa-

tion and Research as Inquiry. As a result of this meeting, the faculty member asked me to collaborate with her to redesign her English 101 course. The new course focused on a metacognitive approach to research as a process of inquiry, and on the creation of an Inquiry Worksheet assignment designed to guide students through the process of selecting, paraphrasing, and responding to (i.e., having a "conversation" with) text from outside sources.

In this chapter, I will describe how I used the *Framework* to initiate conversations with nonlibrarian colleagues and the resulting successful collaboration with a faculty member at my institution. I will suggest ways that the *Framework* can be used as a pedagogical tool to guide librarians and faculty instructors in scaffolding students' acquisition of information literacy skills, specifically skills pertaining to integration and synthesis of sources. Finally, I will discuss the connection between information literacy and writing composition and rhetoric skills, and I will demonstrate how the *Framework* applies to both of these areas.

USING THE *FRAMEWORK* TO INITIATE COLLABORATION

The *Framework* describes information literacy as a metaliteracy, "an overarching set of abilities in which students are consumers and creators of information who can participate successfully in collaborative spaces."[5] By its nature, then, information literacy has the capacity to bring people together from within and across academic disciplines. Furthermore, the *Framework* was written in order to convey information literacy as a "richer, more complex set of core ideas."[6] The frames essentially offer librarians the language to talk about information literacy in a scholarly way and to discuss it as an academic discipline among librarian peers and with faculty colleagues.

When I initiated the meeting with the lead instructor for English 101 and with the manager of the tutoring center to brainstorm how we could better teach students how to integrate sources within their research papers, I began by first summarizing what seemed to be the core deficits among students, based on faculty feedback in survey responses and on my own observations from reading student papers from another faculty member's research writing class. These core deficits were:

1. Student do not have real theses. Without a strong thesis, the rest of the paper will be weak and shallow.
2. Students do not know the difference between "research/analysis" and "report." Essentially, many students do not know how to analyze, rather than simply summarize, secondary sources.
3. Students do not understand, or do not accept, that they must read outside sources to get ideas and to develop arguments. Outside sources are not supposed to be used simply for copying and pasting some quotes; they should be used to obtain the information and ideas needed to develop a strong thesis and

argument points. Thus, students should find and read some outside sources *before* developing a research question and/or thesis.

4. Students need to understand that research is about inquiry, and that they are entering into an ongoing scholarly conversation on their chosen topics. Moreover, the more scholarly sources a student reads, the more he or she will get the idea of what constitutes a "scholarly conversation," and the knack of writing academic papers.

As part of our brainstorming session, I shared the *Framework*, focusing in particular on concepts from the frame Scholarship as Conversation, including that scholarship is "an ongoing conversation in which information users and creators come together and negotiate meaning," and Research as Inquiry, which states that "[r]esearch is iterative and depends upon asking increasingly complex or new questions whose answers in turn develop additional questions or lines of inquiry in any field."[7] These concepts, I suggested, are what students need to learn in order to be able to fully integrate outside sources into their papers and to develop strong theses. Furthermore, I expressed my belief that in order for students to be able to fully integrate sources within their papers, they needed to be directly taught *how* to use the information from these sources to develop questions and meaning from their reading, and how to respond to the texts they read in order to support their theses and to contribute to the scholarly conversation surrounding their topics. I then presented a draft of an Incorporating Sources worksheet I had designed to guide students through the process of selecting, paraphrasing, citing, and responding to text from outside sources.

As a result of this brainstorming session, the English 101 professor, Laura Fox, asked me to assist her in completely redesigning her course to incorporate the *Framework* concepts and to focus the entire course around the research process. It was now July, and she wanted to have her course redesigned in time for the late-August start of the fall semester! Laura created new course assignments that had students use a metacognitive approach to the research process (Research as Inquiry). We made some revisions to the Incorporating Sources worksheet, and Laura suggested calling it the Inquiry Worksheet. Laura also arranged for me to come to her class a few times to co-teach some of the lessons, and added a session in our library computer classroom for students to work on and get direct help with their Inquiry Worksheets (in addition to the two library instruction sessions to which she always brought her English 101 students).

While I had had a positive and innovation-focused working relationship with this faculty member for more than four years at this point, the language of the *Framework* opened up new lines of communication for us. It allowed us to brainstorm ways to move students beyond some of the limitations they were exhibiting in their research papers, while, as an unexpected side effect, increasing student engagement in and enjoyment of the research process. I have subsequently presented concepts from the *Framework* to other instructors, including local high school English teachers. Their reactions to the *Framework* were similar; they recognized in the language of the

frames what they were attempting to teach their students about writing research papers. The information literacy–based language of the *Framework* extended the teachers' ideas about the writing and research process, and they immediately began thinking of ways they could incorporate more of these concepts into their instruction.

THE *FRAMEWORK* AS PEDAGOGICAL TOOL

As an undergraduate in college, I majored in comparative literature, so I spent much of my time deconstructing and complicating meaning from both fictional and nonfictional text. I can, therefore, appreciate how the *Framework* deconstructs information literacy to reveal its complexity and intersectionality. Now, as a librarian who focuses in instruction, my job is to simplify meaning for students. Librarians are especially good at organizing ideas into neat, digestible categories; we impose some sense of order onto the world. While we should resist efforts to relegate the information literacy frames to a set of discrete learning outcomes, which is not their intended use as explicitly stated in the *Framework*, at the same time it is important to get to the heart of the matter of each frame and to determine what students need to know in order to begin to learn each concept—that is, what student learning objectives and activities will bring students to these understandings? The keyword here is *begin*; the *Framework* is meant to cover the full scope of information literacy at all stages and levels of an individual's education, "extending the arc of learning through students' academic careers and converging with other academic and social learning goals"[8] The *Framework*, then, can be used as a pedagogical tool for creating student learning outcomes and classroom activities, as well as for devising ways to scaffold students' understandings of core information literacy concepts over the course of their academic careers.

Student Learning Outcomes and Activities

Librarians should not try to merely "tell students about the frames" as a means of "teaching" them these concepts; rather, we can use each frame as a lens through which to teach our related student learning outcomes. For example, if I want students to understand the concept of Information Creation as a Process, I might want students to begin to understand that if there is a process to the creation of information, that must mean that it matters how and why and by whom a given information source is created, which leads to the importance of recognizing and evaluating different types of information sources, authors, and their intended audiences and purposes—and there you have some familiar and comfortable learning outcomes that can easily be turned into class activities. This is essentially what is referred to as "backward design" in instructional design circles, an idea credited to Grant Wiggins and Jay McTighe from their 2004 book *Understanding by Design*. In fact, the approach to the *Framework* itself was informed by Wiggins and McTighe and backward

design.[9] In my library's information literacy classes for English 101, we had already taken a backward design approach to our library instruction, starting with broad concepts or understandings and narrowing down to related learning outcomes and class activities. So when it came time to incorporate the *Framework* into our library instruction, it was only a matter of tweaking some of the language we were using.

We can use the *Framework* as a guide to the "big picture" concepts that we want our students to come away with over the course of their academic careers, and then think creatively about how we can lead students to these concepts through specific student learning objectives related to their course assignments. We need not and should not try to cover every frame in a single library instruction session but rather think about what we can accomplish in the time we have with students, keeping the big picture (i.e., the frames) in mind. Likewise, we should also feel free to eliminate certain library instruction activities if we cannot connect them with a larger concept or understanding from the *Framework*.

Scaffolding

The *Framework* can be used as a pedagogical tool to guide librarians and faculty instructors in scaffolding students' acquisition of information literacy skills across various course levels and subject areas. Indeed, the *Framework* itself states that it "is not designed to be implemented in a single information literacy session in a student's academic career; it is intended to be developmentally and systematically integrated into the student's academic program at [a] variety of levels"[10] When I am approached by a faculty member to conduct a library instruction session for a new course, I look at the course's primary research assignments and see if there is a theme or concept that I can pull out and connect with some aspect of the *Framework*, perhaps one that I have not covered extensively in previous classes.

For example, Laura Fox recently decided to change her English Literature (English 102) course to focus on *The Crucible*, drawing comparisons to McCarthyism and to current events. This course has English 101 as a prerequisite, so most of the students in the English Literature class will have had the introductory information literacy session. For this class's library session, I used the themes of censorship, fearmongering, and the power of propaganda as an opportunity to connect with the Information Has Value frame, creating a lesson that focused on some of the points from this frame, including "[v]alue may be wielded by powerful interests in ways that marginalize certain voices. However, value may also be leveraged by individuals and organizations to effect change and for civic, economic, social, or personal gains."[11] Students answered questions on a worksheet asking them to list examples of the ways in which information is wielded for political, social, or personal gains in *The Crucible* and examples of which voices have power and which are marginalized. This connected nicely with a discussion about how information has power and "possesses several dimensions of value, including as a commodity, as a means of education, as a means to influence."[12]

The *Framework* can be used as a teaching resource to come back to and to dip from with each new instructional opportunity, to create lesson activities that expose students to these concepts in graduated steps, at different levels of their academic careers, using their course subject matter and assignments as vessels through which to teach these concepts. Let us look at how the *Framework* can specifically be used to teach students how to integrate sources into their research papers.

Integrating Sources

The problem: teaching students how to better integrate sources into their research papers. The task: figuring out what skills and concepts students need to understand in order for them to learn how to do this successfully. The solution: the *Framework*—or at least this was the "guidance document"[13] that was going to provide Laura Fox and me with the conceptual framework needed to figure out how to help students be more successful with their research papers. Laura, being a talented instructor, recognized right away that not only was it going to take more than just one extra library instruction session but that it would also require a complete overhaul of her course to guide students through the research process with each writing assignment. In particular, Laura noted that students needed to know the "why" of research: What is the point of having students undertake this lengthy, painstaking assignment?

As mentioned, the frames Research as Inquiry and Scholarship as Conversation gave us the most fodder for helping students understand the purpose and process of research. Some of the most pertinent points from these frames were:

1. Research is *iterative*—it is not a linear process.
2. Research is about *inquiry*—being curious about something, asking questions, reading sources related to those questions, and developing new questions as a result of what they have read.
3. Research is about engaging in a *conversation* about the topic, not about "finding the answer" to the question. A good research topic does not have one simple, factual answer to it.
4. The authors of scholarly sources are engaging in the kinds of conversations in which students are expected to engage in their own research papers, tying in outside sources with their own ideas and analysis.

Some of the changes Laura made to her course in order to incorporate these concepts from the *Framework* included:

1. Making the compare and contrast paper assignment a comparison of two potential paper topics in which students ultimately decide which topic would work best for their research papers and give their reasons why.
2. Having students stick with the same general topic for all of their papers in the course. Rather than becoming bored with their topics, this allowed students to

more fully engage and delve deeply into topics in which they had a true interest, to write about their topics in different ways for different assignments, and to develop new questions and lines of thinking related to their topics.

3. Spending time in class showing students various examples of scholarly journal articles, related to the same general topic (for example, social media), and discussing why some of these articles would be more useful for an undergraduate paper than others. For the most part, the scholarly/academic genre of reading is new to most students at my institution. Students need to be taught *how* to read these sources and how to select which sources are actually going to be useful for their purposes. This activity helped to illustrate to students how scholarship is a conversation, and helped them find their places within it, acknowledging that it was okay for them to dismiss some sources that might be too esoteric or whose use of professional jargon might render the article too difficult to read and comprehend.
4. Assigning the Inquiry Worksheets. Students were to complete at least ten to twenty of these worksheets, which were graded, essentially giving students credit for the behind-the-scenes work of research that faculty assume has taken place but is often invisible with only the product—the research paper—being seen and graded. The worksheet includes pointed questions about the meaning and significance of the text students are citing, helping to stimulate their thinking and to engage them in a conversation with the text. Having students engage with scholarly sources by assigning these worksheets early on in the semester gave students time to truly participate in an iterative research process. It also helped students experience some of the knowledge practices listed in the *Framework*, in which they "summarize the changes in scholarly perspective over time on a particular topic," and "recognize that a given scholarly work may not represent the only—or even the majority—perspective on the issue."[14] These worksheets also fostered some of the dispositions cited in the *Framework*, such as the students viewing "research as open-ended exploration and engagement with information," as well as understanding and accepting "their own intellectual or experiential limitations,"[15] rather than assuming they already know (or should know) everything they need to know about a given topic. In other words, students came to understand the reasons *why* they were doing research: to learn more about a topic, and to contribute to the conversation by creating new ideas and knowledge about the topic.

The results of this course redesign, and in particular the use of the Inquiry Worksheets, were extremely positive; students were more engaged with their topics and produced better papers, and some reported that they actually enjoyed writing their research papers, a response previously unheard of for this professor. Laura also noted that with the redesign of her course assignments, she found far fewer instances of plagiarism in student papers. This seemed to be at least partially a by-product of the students' higher levels of engagement with their research topics. Furthermore,

students scored higher than in previous semesters on the rubric item "Draws inferences from and establishes relationships between evidence and the thesis." We were therefore able to note a correlation between the use of the Inquiry Worksheets and students' increased ability to effectively use information from the sources they found in order to write better, more integrated, and more engaging papers. I will further demonstrate how the intersection of writing composition and information literacy is evident and dynamic in the language of the *Framework*.

INTERSECTION OF INFORMATION LITERACY AND WRITING COMPOSITION

Much has been written about the "positive correlation between [information literacy] and student writing skills";[16] however, upon analyzing student papers some have noticed that there is no correlation between the quality of a student's sources and the grade received on a paper. Some studies have even suggested that there is a negative relationship, which may be at least partially a result of students finding too many sources and not knowing how to use them. Sometimes this is due to student reading deficits, especially when they are being required to use scholarly journal articles. As stated by Margy MacMillan, "What good is teaching students how to find scholarly resources if they can't read them?"[17] As a result, students make very little effort to synthesize outside sources as part of their research papers, instead simply tacking on some quotes and information from the sources, seemingly as an afterthought. The intersection of writing skills, information literacy, and, I would add, reading fluency is apparent.

Michael J. Carlozzi argues extensively about the necessity of librarians to engage in teaching writing composition, the importance of librarians' involvement in assignment creation, and librarians' responsibility for teaching students higher-order reading and thinking skills. As predicted by Stephanie Rosenblatt, "Time previously spent on ensuring that students practice keyword searching will in future be allocated to modeling the synthesis of disparate sources and to dissecting the work of experts to see the purpose the literature serves in scholarly work."[18] Carlozzi argues that it is not enough to simply increase the amount of time students spend with a librarian: "It seems inappropriate to assume that an embedded librarianship project, without any focus on reading complex material or enhancing writing skills, would have affected written synthesis any differently from the standard one-shot model."[19] The librarian's particular role and instructional focus within the course are of vital importance.

There is sometimes an incorrect assumption among librarians and faculty alike that students know the rhetorical moves to make to integrate information from a source into their arguments and papers. On the contrary, students often lack the ability to ask the right questions about the information they encounter in order to determine how to use it.[20] Asking the right questions about information sources is,

in and of itself, an information literacy skill as well as an important rhetorical skill. Teaching students how to use information traditionally has not been given as much attention by librarians in one-shot library instruction sessions, partly because of presumed lack of time but also because librarians often feel that this is not their place or their area of expertise. Librarians often think of "use of information" as simply a writing skill, while focusing more on things like source retrieval and evaluation, citing, and avoiding plagiarism. But how to use a source? How to ask questions about information? These may not be things that can be taught in just one library session, but that does not mean that librarians, and our expertise in information structure and creation, do not have something to offer in the way of ideas for how to teach students to use sources for research.

What is the role of librarians in teaching how to read, summarize, and integrate sources? In taking a look at writing instruction texts, librarians will see that there are obvious connections between composition and information literacy. For instance, in the college writing handbook *They Say, I Say: The Moves that Matter in Academic Writing*, by Gerald Graff and Cathy Birkenstein, among the moves writers make in integrating outside sources are evaluating sources' "uses and limits," engaging in inquiry, and looking critically at the arguments in a source.[21] Robert Miller and Sandy Friedman write about their librarian-writing instructor partnership and how they connect information literacy rubrics having to do with the uses and purposes of different kinds of sources with writing methods, asking students to think about how each source they find in a database might be used in their papers, merging writing rhetoric with information literacy concepts: "In responding to these questions, students begin to orient themselves differently towards sources. Perhaps they start to experience scholarly writing as a conversation."[22] Thus, learning to ask questions as a rhetorical strategy correlates directly with the frame Scholarship as Conversation.

The Graff and Birkenstein textbook gives students templates or "linguistic frameworks" for integrating source materials into their papers. This may seem at first glance like surface-level instruction that does not teach students to think critically; however, the fact is that templates and formulas can and do "help students move towards deeper, more complex ideas" and "push students to make new intellectual moves."[23] Our Inquiry Worksheet functions in a similar way to these writing templates, connecting both the mechanical use of sources such as citing and paraphrasing with the analysis and critical questioning of sources.

Much like the templates in *They Say, I Say* give students rhetorical tools to discuss their sources, so the *Framework* has given librarians the language to discuss information literacy in terms of its relationship to writing composition. Faculty want their students' papers to exhibit multidimensional lines of thought, seamlessly incorporating outside sources with their own ideas. Librarians, through the *Framework* concepts, can help faculty to see that these skills are contingent upon a student's understanding of how sources are created and disseminated, so that students can recognize their own place in this information creation cycle. Librarians can add a

unique dimension of thought to writing instruction, helping to provide students with more comprehensive instruction in conducting research.

The importance of classroom discourse in terms of how librarians and instructors refer to the research writing process also influences how students learn about information literacy.[24] Laura and I altered the discourse around research and writing through the redesign of the course assignments, through the ways in which we talked about research during class instruction, and by guiding students through the activities of finding, evaluating, and using sources. Wendy Holliday and Jim Rogers note that there is often a contradiction between a course's syllabus and assignment descriptions and the classroom discourse. They found that "[c]lassroom discourse concentrated on the idea of 'finding sources' as the goal or object of the research process."[25] Classroom discourse often conveys sources as objects to be found, and on finding the "right kind" and the "right number" of sources, rather than focusing on the information in those sources. And, though well intentioned, there is even a disconnect between assignments requiring students to use a variety of sources and the message it sends to students that the research process is mainly about finding sources to be cited.[26]

From the very beginning of Laura's redesigned course, we referred to the students as scholars, and discussed the definition of *scholar*, preparing them and giving them confidence to engage in a scholarly conversation in their research papers. We also guided students through the process of using and discussing the information they were encountering in the sources they read by having students think reflectively about their research processes and writing about them in their papers and assignments, including the Inquiry Worksheet. Holliday and Rogers note that "[s]tudents who saw information seeking as scrutinizing and analyzing" used more sources and developed a "deeper understanding of their topic."[27]

Holliday and Rogers also point out that assignment requirements often give students the incorrect impression that each individual source expresses a single viewpoint or covers one specific aspect of a topic, when in reality scholarly sources are much more multilayered than that. Sources do not merely serve the purpose of giving students distinct points for an aspect of their argument, completely detached from the other sources they have read and not taking into consideration the relationship with the other sources they have read and how the information contained in these sources will intertwine, corroborate, or contradict one another.[28] This ties in with language from the frame Scholarship as Conversation, which states that "experts understand that a given issue may be characterized by several competing perspectives" and "are therefore inclined to seek out many perspectives, not merely the ones with which they are familiar."[29] Ultimately, all of the sources together should help provide the student with a holistic understanding of the topic.

There is much within the *Framework for Information Literacy for Higher Education* that connects directly and intricately with teaching students how to more effectively analyze and incorporate information from outside sources into their

papers. By marrying information literacy concepts with composition and rhetoric skills, faculty and librarians can provide students with more comprehensive and effective instruction in constructing research papers. Indeed, most students will not be successful in merging information from outside sources with their own ideas and arguments if they do not first learn how to engage deeply and critically with these sources. Likewise, we cannot expect students to evolve in their information literacy without hands-on experience reading and using information sources. Ideally, librarians' "collaboration with writing teachers, especially in the context of a first-year writing seminar, can launch students towards a new way of conceptualizing the library: as a resource for ideas, rather than just a repository for information."[30] The potential of the *Framework* to further such collaborations has only just begun to be realized.

NOTES

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2. Ibid., 661.
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4. Sandy Friedman and Robert Miller, "Launching Students towards Source-Based Writing: An Introduction for Librarians," *C&RL News* 77, no. 4 (April 2016): 199.
5. ACRL, *Framework*, 2.
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7. Ibid., 7–8.
8. Ibid., 3.
9. Ibid., 2.
10. Ibid., 10.
11. Ibid., 6.
12. Ibid., 6.
13. Ibid., 11.
14. Ibid., 8.
15. Ibid., 7.
16. Carlozzi, "They Found It," 660.
17. Ibid., 661.
18. Ibid., 667.
19. Ibid., 662.
20. Friedman and Miller, "Launching Students," 199.
21. Ibid., 200.
22. Ibid., 201.
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24. Wendy Holliday and Jim Rogers, "Talking about Information Literacy: The Mediating Role of Discourse in a College Writing Classroom," *portal: Libraries and the Academy* 13, no. 3 (2013): 258, https://doi.org/10.1353/pla.2013.0025.

25. Ibid., 260.
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27. Ibid., 258.
28. Ibid., 262.
29. ACRL, *Framework*, 8.
30. Friedman and Miller, "Launching Students," 201.

10

Redesigning a Credit-Bearing Course using the ACRL *Information Literacy Framework*

Kelly Diamond and Alyssa Wright

West Virginia University's (WVU) new Office of Curriculum and Instructional Support (OCIS) began operations on May 1, 2017. This office originally consisted of Kelly Diamond, office head; David Roth, assistant instructional designer; and Kelly Doyle, Wikipedian in residence for gender equity. OCIS is responsible for creating and managing the curriculum for the libraries' credit-bearing courses. The office provides instructional support to librarians, whether it is through development of digital learning objects and use of the WVU's course management system, Blackboard, or assistance with lesson plans, assessments, or classroom observations. The office also works with other units on campus to provide information literacy and instructional support. OCIS also oversees the WVU Plagiarism Avoidance Tutorial, a multimodule tutorial available through the web but also embeddable within Blackboard.

Before the creation of OCIS, instruction at WVU Libraries was somewhat decentralized: each campus library (Evansdale, Downtown, and Health Sciences) scheduled its own bibliographic instruction sessions and kept its own data regarding those sessions. Coordination and management of the ULIB (WVU libraries' course-bearing classes) were located at the Downtown Campus Library through the Downtown Campus Library instruction coordinator. The new office centralized course scheduling, management, and oversight into one office.

The office's first project was to extensively revise ULIB 101, Introduction to Library Research, WVU Libraries' one-credit course. Offered for more than thirty-five years, ULIB 101 was last revised in 2014. At that time, the course was a one-credit full-semester (sixteen-week) course that met once a week. The learning objectives closely followed the ACRL *Information Literacy Standards for Higher Education*. We used a flipped classroom team-based learning model and assigned students problem-based research scenarios. Students were assigned short videos and readings in place of a lecture. They took a team quiz on the material at the beginning of each class. The

remainder of class was spent applying what they learned through class exercises. The final assessment was a research guide that addressed the information need outlined in their assigned scenarios. The course was a degree requirement for our College of Media, which has a relatively large student population. To meet demand, we ran eight to ten sections a semester. Librarians who taught the class were drawn from across many units, from research services to cataloging. In a 2015 survey, around half of the librarians who taught the class felt that the workload was too high given their other duties. These complaints, as well as a change in priorities of the libraries and the College of Media, resulted in a discontinuation of the degree requirement. Enrollment numbers for the course steadily fell after this change, reducing the number of sections needed.

Redesigning ULIB 101 had two challenges: finding students and finding instructors. The new course, which fulfills no degree requirements other than credit hours, must be attractive for students to voluntarily take and attractive for librarians to teach. After ULIB 101 was removed as a requirement for the College of Media, teaching ULIB was no longer a position requirement for librarians. Primarily, we needed to (1) create a more engaging course, (2) make class appealing to students who needed a credit hour,[1] and (3) reduce workload and potential burnout so that librarians would want to teach it.

The new ULIB 101 course was developed with a working group consisting of Kelly Diamond; Alyssa Wright; Kelly Doyle, former Wikipedian in residence; Beth Royall, creative arts librarian; and Jessica McMillen, head of web and digital services. The librarians in the group had extensive experience teaching ULIB 101 both online and on-site; the Wikipedian in residence designed lesson plans incorporating Wikipedia into the class.

Using a combination of backward design and ADDIE (analyze, design, develop, implement, evaluate), we worked to take the class from its sixteen-week on-site version to a shortened eight-week hybrid course. The format and duration of the course was the first design decision we made based on our analysis of teacher/student experience with the sixteen-week version. A shortened class would not only engage students but also prevent instructor burnout. We decided to make the class hybrid for the same reasons: Varying the instruction mode would keep students involved and make the course appealing, as they would need to attend on-site for only five meetings. In addition, the hybrid model helped librarians to keep schedules open for other duties and responsibilities and also alleviated burnout by varying teaching modes.[2]

Implementing backward design requires the designer to first determine what students should "understand, and be able to do."[3] Next, the designer must determine and create activities to "determine appropriate assessment evidence" that students have reached the prescribed levels of knowledge, understanding, and skill. These activities can range from informal checks to exams to large-scale projects.[4] Lastly, the designer must plan the actual instruction and other learning experiences.[5] Following this model, we first developed course outcomes, then designed a final assessment

as well as scaffolded assignments to test whether students had achieved the desired outcomes. We concluded by planning weekly learning objectives, experiences, and instruction to give students the knowledge, understanding, and skills needed to successfully achieve the course outcomes.

While the previous ULIB 101 course was based on student achievement of the ACRL *Information Literacy Competency Standards*, we wanted this new iteration to be grounded in and informed by the *Framework for Information Literacy*.[6] We also found that elements from the Council of Writing Program Administrators' (WPA) *Framework for Success in Postsecondary Writing* were complementary with the ACRL *Framework*, particularly the WPA *Framework*'s eight habits of mind: curiosity, openness, engagement, creativity, persistence, responsibility, flexibility, and metacognition.[7] These habits of mind complemented and expanded our understanding and eventual implementation of selected ACRL *Framework* dispositions.

Our final course outcomes came directly from the knowledge practices and dispositions from the frames Authority Is Constructed and Contextual, Information Creation as Process, and Information Has Value. We determined that at the end of the course, students will:

- recognize that authoritative content may be packaged formally or informally and may include sources of all media types;
- assess the fit between an information product's creation process and a particular information need;
- develop, in their own creation processes, an understanding that their choices impact the purposes for which the information product will be used and the message it conveys; and
- recognize that all information, personal and published, has ethical and economic value that affects its production and dissemination.

We selected these outcomes as they reflect basic skills and habits of mind that would serve students not only as college researchers but also in their out-of-classroom life. We wanted students not only to think critically about the sources needed for a project but also to consider information's effect on or utility to a specific audience. We also wanted them to reflect on their own creation experience and perhaps interrogate their bias a little bit. And we wanted to encourage habits of metacognition and self-reflection.

After deciding upon course outcomes, the next step in backward design is to design assessments that measure whether students have achieved these outcomes. We decided on a final project consisting of an infographic on a topic of the students' choosing as well as a reflection report about their decisions creating the infographic. Students work on scaffolded assignments throughout the eight-week course, each one designed to help complete the infographic.

To complete the infographic, we ask students to:

- Using the topic that you've worked with the past few weeks, choose an element of your area of expertise and explain it to a novice learner. Be aware this is not simply a "how to" set of instructions, but also an explanation of "why" as well. Studies have shown that people learn new material better if they understand why it is important or why something is done the way that it is.
- List the sources you used on the infographic. Include a method of "in-text" citation to indicate how you used your sources in the infographic. See the sample guides for a model.
- Include a Creative Commons license or copyright mark on your infographic.
- Please review past assignments as they may provide content for your infographic.

The grading rubric for the infographic assesses this assignment based on audience awareness and their need for credible and accessible information; the relevance and credibility of the information (or "fit") used in the infographic's creation; and the clarity of the infographic's citation and its licensing. This part of the assignment assesses primarily the *Framework*'s and course outcomes knowledge practices. (See table 10.1 for complete rubric.)

We also ask students to write a one- to two-page report explaining and reflecting on their research process, specifically the decisions and choices they made creating their infographics. The report begins with a works cited or references page of the sources they used. While the reflection report grading rubric assesses the knowledge practices surrounding citation inclusion and formatting, the rubric also assesses *Framework* dispositions and what the WPA *Framework for Success in Postsecondary Writing* refers to as "habits of mind."[8] The reflection report rubric evaluates how thoughtfully students reflect on their research and selection processes as well as how awareness of audience impacted these processes as well. (See table 10.2 for complete rubric.)

Once the final assessment has been created, the last step in backward design is to design scaffolded learning activities that allow learners to successfully complete the final assessment, in this case, the infographic and reflection report. To facilitate student success, we scaffolded learning activities and assessment, each one aligned with a skill, knowledge, or disposition needed to successfully complete the infographic and reflection report. We also designed the schedule of the course to follow a repeating structure: Students complete a short reading or watch a short video, take an online quiz on the content, complete an in-class learning activity, and then either expand on that activity or reflect upon it in the online portion of the class, for example, posting a reflection to the course discussion board. The repeating weekly structure of the class allows students to focus on the coursework and not what might be due the next day.

Table 10.1. Final Project Rubric: Infographic

Criteria	*Excellent*	*Above Average*	*Average*	*Below Average*	*Incomplete*
Infographic: Audience Awareness	Infographic displays detailed evidence of creator's insightful awareness of audience through the clear presentation of information as well as thoughtful design in regards to the audience. Infographic needs no or very minor editing.	Infographic displays evidence of creator's audience awareness through the information presented and how the information is presented. Infographic needs minor editing.	Infographic displays evidence of creator's audience awareness through the information presented and how the information is presented. One or two sections or areas may be unclear to the specified audience. Infographic needs editing and minor rewriting.	Infographic displays little evidence of audience awareness: Information presented may be inappropriate and/or the presentation may be unclear to the audience. One or two sections or areas may be unclear to the specified audience. Infographic needs editing and rewriting.	Incomplete or not turned in.
Infographic: Content	Infographic contains credible and topic-appropriate information from a variety of sources with specific thought given to the needs of the audience.	Infographic contains credible and topic-appropriate information from a variety of sources.	Infographic contains mostly credible and topic-appropriate information. Infographic could be improved by a greater variety of sources.	Infographic does not contain enough information, and/or the information is not from appropriate sources and/or is not from a variety of sources.	Incomplete or not turned in.

Sources & Citation	Sources used in Infographic's creation are clear and obvious to a viewer. The Infographic's creator uses a visual method that clearly indicates which source was used for specific information within the Infographic.	Sources used in Infographic's creation are included and visible on the Infographic. The Infographic's creator uses a method that indicates which source was used for specific information within the Infographic.	Sources used in Infographic's creation are somewhat apparent to an audience. The Infographic's creator uses a visual method which generally indicates which source was used for specific information within the Infographic.	Sources used in Infographic's creation are not apparent to a viewer. The Infographic's creator either does not use a visual method which indicates which source was used for specific information within the Infographic or the method used is not clear to the audience.	No sources listed.
Licensing	Infographic displays either a CC license or copyright symbol.				Infographic does not display either a CC license or copyright symbol.

Table 10.2. Final Project Rubric: Reflection Report

Criteria	*Excellent*	*Above Average*	*Average*	*Below Average*	*Incomplete*
Reflection Paper: Source Citations (15%)	Citations are correct. Writer clearly understands the conventions.	Only a few errors are present in citations. The writer understands the conventions.	Some errors are present in citations. However, the writer mostly understands the conventions.	Several non-minor errors are present in citations. The writer appears not to understand the conventions.	Citations are not provided.
Reflection Paper: Finding Sources (25%)	Writer supplies specific and detailed examples. Process of finding sources very clear to a reader. Section needs no or very minor editing.	Writer supplies details and examples. Process of finding sources is generally clear to a reader. Section needs minor editing.	Writer supplies some details and examples. Process of finding sources could be clearer to a reader. Section needs editing and minor rewriting.	Writer supplies no details and/or examples. Process of finding sources is not clear to a reader. Section reads like a draft, not a finished product.	Not turned in.
Reflection Paper: Selecting Sources (25%)	Writer supplies specific and detailed examples. Process of selecting sources very clear to a reader. Section needs no or very minor editing.	Writer supplies details and examples. Process of selecting sources is generally clear to a reader. Section needs minor editing.	Writer supplies some details and examples. Process of selecting sources could be clearer to a reader. Section needs editing and minor rewriting.	Writer supplies no details and/or examples. Process of selecting sources is not clear to a reader. Section reads like a draft, not a finished product.	Not turned in.

Reflection Paper: Audience Awareness (25%)	Writer supplies specific insights and thoughtful reflection regarding content choices for a specific audience. Process is clear to a reader. Section needs no or very minor editing.	Writer supplies insights and reflection regarding content choices for a specific audience. Process is generally clear to a reader. Section needs minor editing.	Writer supplies some insights and reflection regarding content choices for a specific audience. Process is somewhat clear to a reader. Section needs editing and minor rewriting to make process clearer to a reader.	Writer supplies little to no insights or reflection regarding content choices for a specific audience. Process is unclear to a reader. Section reads like a draft, not a finished product.	Not turned in.
Reflection Paper: Readability (10%)	Report is very easy to read; it contains only minor errors which do not distract a reader.	Report is generally easy to read; it contains a few minor errors which generally do not distract a reader. Entire report needs only minor editing.	Report is readable; it contains some errors. However, they do not interfere with a reader's general understanding of the paper. Entire report needs editing and minor rewriting.	Report has problems which make it difficult or distracting to read and interfere with a reader's understanding of the paper. Entire report reads like a draft, not a finished product.	Not turned in.

ULIB 101 weeks one and two begin with students' choosing a topic and getting to know their classmates. Students first list areas in which they have expertise or authority; these areas can be related to school, work, hobbies, or anything else. After students choose three topics of personal expertise, they need to find an appropriate and narrow focus. To help students find an appropriate topic and focus for their infographics, students read and reflected on Robert Twigger's concept of "micromastery."[9] Twigger defines micromastery as "a self-contained unit . . . complete in itself, but connected to a greater field."[10] After brainstorming areas (school, work, hobbies) of personal authority, students choose a micromastery topic for their infographic.

We ask students to begin with topics of personal expertise for several reasons, but the main reason is to facilitate the students' process through the knowledge practices and dispositions/mind-sets of the selected framework threshold concepts. Starting the course from a student's place of authority engenders not only confidence but also comfort and familiarity as well. As Jan Meyer and Ray Land note, threshold concepts are "troublesome" initially, functioning as obstacles to student learning and thereby creating anxiety and resistance in learners.[11] If students start and work with topics of familiarity and interest, the resulting anxiety will be lessened and students can focus more mental energy, or "intrinsic cognitive load," on course materials and learning activities.[12]

Personal investment also assists students in another way: through learning transfer. According to the *Encyclopedia of Applied Psychology*, "Transfer of learning is considered to be the use of past learning in the learning of something new and the application of learning to both similar and new situations."[13] Ideally, transfer from one context to another is closely related, for example, learning to drive a standard transmission car if one knows how to drive a car with an automatic transmission. This transfer is known as *near transfer*. Near transfer works by "triggering . . . well-practiced routines in circumstances where there is perceptual similarity to the original learning context."[14] As anyone who has participated in online forums devoted to hobbies can attest, people can be well informed and passionate about their interests. Students bring their intrinsic interest and current knowledge about their topic and are able to transfer that critical eye to new sources and resources.

Week three in the course asks students to transfer their knowledge and abilities to evaluate information pertaining to their topic by working with Wikipedia articles. Students learn how Wikipedia articles are structured, how to find sources for their infographic in the bibliography, and more importantly, how articles are evaluated and graded by the Wikimedia foundation. Students also discuss how accurate they find Wikipedia's evaluation of articles on their topics. This discussion helps students learn to evaluate information but also gives them the Wikipedia rubric with which to work.

In the remaining weeks, students engage in learning activities that encourage them to transfer their knowledge, skills, and dispositions to new proficiencies and cross the threshold concepts. After deciding on topics, students begin working with proprietary library databases in week four to find and evaluate sources for their in-

fographic, using techniques learned the previous week. In week five, students create a rough draft of their infographic and share it with classmates for feedback. Using the critiques from week five, students in week six search for supporting information in CREDO, Statista, and specialized databases related to their topics. Week seven, the penultimate week, focuses on current copyright cases involving music, art, and fashion. Students look over current cases and discuss how they would rule. Students also review the types of Creative Commons licenses, apply one to their infographic, and reflect on why they chose it. The course wraps up in week eight with workshop time in the classroom where students can ask the librarian questions as well as share drafts of the reflection memo. (See the appendix for a chart with aligned weekly learning outcomes, assessments, and course outcomes.)

The final step in backward design is implementation. We offered the first section of ULIB 101 in the first eight weeks (Fall I) of fall semester 2017, which enrolled 28 out of a possible 30 students. In the subsequent three semesters, we have run four sections with a total of 58 out of a possible 114 students total.

Student evaluations and the instructor survey post curriculum changes show overall positive trends for the course. A statistical analysis of student evaluations of all sections from fall 2014 through fall 2018 shows a slight rise in students' ranking of the course overall from the immediate past semesters. Students were asked to rank the course on a 5-point Likert scale for three areas: the overall quality of the course, the student's overall learning in the course, and the instructor's overall teaching effectiveness. We compared means for student responses pre- and post-curriculum change. A T-test showed a significant positive change in means for the overall quality of the course from the old curriculum (M=3.74, SD=0.49) and the new curriculum (M=4.26, SD=0.16); t(20)=-3.97, p=0.007. There was also a significant difference in the means for overall teaching effectiveness from the old curriculum (M=4.0, SD= 0.41) and the new curriculum (M=4.6 SD= 0.26); t(25)=-3.19, p=0.0039. Students' mean rankings for their overall learning in the course showed a slight positive increase but not enough to show a significant difference between the old curriculum (M=3.66, SD=0.43) and the new curriculum (M=3.82, DS=0.63); t(25)=-0.68, p=0.50). Students' qualitative responses were generally positive, but individual comments varied wildly in their likes and dislikes.

Librarian faculty were asked to complete a post-curriculum-change survey that asked them to rank their satisfaction with the course on a 5-point Likert scale in five areas: the overall quality of the course, perceived level of student engagement, how well the course content (reading, videos, and lesson topics) contributes to student learning, how well the course format (length, lesson plans, and hybrid meetings) contributes to student learning, and instructor workload. Overall, instructors were pleased with the course. One hundred percent of respondents were satisfied or very satisfied with all but one area evaluated. Mean scores for the course overall, course content, and instructor workload were 4.33. It is significant to note that all the instructors were satisfied with the instructor workload required for the course, which was a major area of complaint from instructors before curriculum change.

Instructors were also uniformly pleased with the hybrid format and the shortened length of the course. The only area where instructors indicated a need for improvement was student engagement, which had a mean score of 3.00. A primary reason for the instructor rating of student engagement was a perceived lack of student motivation to complete the out-of-class videos and readings. Instructor comments in this area indicated that students were highly engaged in some of the active, content-rich lessons such as the lesson on copyright and fair use. Other comments indicated an uneven perception of student engagement. One instructor commented: "I think most of the students perceived the course content as 'easy' and did not invest much thought into the why-we're-doing-this." However, another commented: "I had more than one student tell me that they were already applying research skills they learned in the course in other classes and students seemed much more engaged in their research than they were in previous semesters when we selected topics for them."

We unfortunately do not have a comparable pre-curriculum-change instructor survey to compare with these results, but anecdotally, engaging students and motivating them to do course readings and video assignments has been a persistent problem for the course. We see some bright spots for engagement in the revised curriculum, especially the increased student engagement through micromastery topics and weekly lessons driven by the ACRL *Framework* such as the copyright and fair use lesson. One of the challenges we see as we continue to revise the course is finding and/or developing readings and videos that provide content that delivers the needed information and engages students. We also need to find more ways to encourage students to authentically reflect on their learning and how they can apply it in their lives.

While we consider the new hybrid eight-week version of ULIB 101 to be successful, we have continued to implement small changes. For example, we lowered the enrollment cap from thirty to twenty-four so that teaching librarians could interact more effectively with fewer students. The lower enrollment also lessens the amount of grading. OCIS is also working to find a happy medium with the number of sections offered to keep enrollment at ideally an 85 percent fill rate. The office also successfully applied to the WVU Faculty Senate to have the credit earned raised from one to two credit hours. Not only does this accurately reflect the amount of work students do in the class, it also makes the class more appealing for students looking to increase their credit hours for the semester.

APPENDIX

Table 10.3. Course Learning Objectives, Assessments, and Outcomes by Week

Week	*Learning Objectives*	*Assessments*	*Aligned Course Outcomes*
1. Introduction to the Course	• Students will reflect on idea of personal expertise and authority	• Chart outlining student areas of expertise in school, work, hobbies, or other	• Recognize that authoritative content may be packaged formally or informally and may include sources of all media types
2. Micromastery and Authority	• Students will be able to define micromastery • Students will be able to list own areas of micromastery	• Chart outlining student areas of expertise in school, work, hobbies, or other revised to include areas of micromastery • Discussion post which states what micomastery topic they have picked for their Infographic and reflecting on their choice	• Recognize that authoritative content may be packaged formally or informally and may include sources of all media types
3. Wikipedia and Evaluation	• Students will articulate how Wikipedia evaluates and classifies articles • Students will apply elements of Wikipedia's rubric	• Evaluation of a website using elements of Wikipedia's grading rubric	• Recognize that authoritative content may be packaged formally or informally and may include sources of all media types • Assess the fit between an information product's creation process and a particular information need
4. Searching Proprietary Databases	• Students will: • Articulate differences and similarities between a web search engine and a library database • Apply basic search techniques in a library database and use of result management tools (download; email; inter-library loan requests)	• Discussion board post: Search and select an appropriate article for their Infographic and evaluate it using Wikipedia rubric; reflect on differences between Wikipedia article and academic article	• Recognize that authoritative content may be packaged formally or informally and may include sources of all media types • Assess the fit between an information product's creation process and a particular information need

Table 10.3. ***(continued)***

Week	*Learning Objectives*	*Assessments*	*Aligned Course Outcomes*
5. Authority and Evaluation	• Students will be able to articulate how the Final Project will be evaluated • Students will be able to apply Final Project rubric	• Students create a rough draft of their Infographic • Students evaluate and critique a classmate's Infographic draft using the grading rubric	• Recognize that authoritative content may be packaged formally or informally and may include sources of all media types • Assess the fit between an information product's creation process and a particular information need • Develop, in their own creation processes, an understanding that their choices impact the purposes for which the information product will be used and the message it conveys
6. Proprietary Databases and Re-Searching	• Students will recognize that searching is strategic, iterative, and adaptable	• Students search CREDO, Statista, and an instructor-assigned database to find information needed to address deficiencies in Infographic identified by classmate	• Recognize that authoritative content may be packaged formally or informally and may include sources of all media types • Assess the fit between an information product's creation process and a particular information need • Develop, in their own creation processes, an understanding that their choices impact the purposes for which the information product will be used and the message it conveys

7. Copyright, Fair Use, and Creative Commons	• Students will be able to articulate issues surrounding intellectual property including use of citation as well as the economic value of creative & intellectual work and apply this knowledge in the creation of information • Students will be able to apply this knowledge to their own information product	• Students will choose a Creative Commons license for their Infographic and reflect on the reasons that they chose that particular license	• Recognize that all information, personal and published, has ethical and economic value which affects its production and dissemination
8. Completing the Project	• Students will be able to identify when citations are needed and create them	• Students add citations in-class to their Infographics	• Recognize that all information, personal and published, has ethical and economic value which affects its production and dissemination

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11

The *Framework* and the Context: Refocusing Information Literacy at a Caribbean University

Paulette A. Kerr and Jessica C. Lewis

Academic libraries in the English-speaking Caribbean are new in the information landscape. While the region boasts public libraries dating back to the late nineteenth century, the arrival of academic libraries is synchronous with the establishment of the University of the West Indies (the UWI). The UWI is the oldest regional institution of learning within the Commonwealth Caribbean, founded in 1948 as a college of the University of London. It is also the largest higher education provider in the English-speaking Caribbean, serving fifty thousand students via four campuses and seventeen countries including Anguilla, Antigua and Barbuda, the Bahamas, Barbados, Belize, the British Virgin Islands, Cayman Islands, Dominica, Grenada, Jamaica, Montserrat, St. Kitts/Nevis, St. Lucia, St. Vincent and the Grenadines, and the Republic of Trinidad and Tobago.

With the establishment of the UWI came the advent of the Caribbean academic librarian with the mandate to assist researchers and emerging scholars on their academic journeys. Higher education aims to groom scholars to think critically and seek new knowledge through engagement with information in all its facets and sources, dialogue, as well as the research process. Expectations of how this engagement would be developed in students are not always clear in higher education institutions, where the focus is primarily on discipline content. However, academic libraries and librarians have positioned themselves as agents for ensuring that this happens, usually through information literacy (IL) interventions.

In developing countries like Jamaica, there are issues associated with the successful implementation of IL, including the levels of literacy of the population, information overload and information anxiety, the emphasis on technology versus information literacy, and the disparity in education levels.[1] Vanessa Middleton also found challenges in academic institutions in the Caribbean of "reaching a vast number of students in a brief period of time with limited staffing."[2]

CARIBBEAN CULTURE AND IL CONTEXT

Hopeton Dunn and Sheena Johnson-Brown provide an interesting insight into the role of IL in the cultural and social contexts of developing countries of the digital Global South. The authors use the historic preindustrial example of the indigenous community of escaped former slaves, called Maroons in Jamaica, to demonstrate expanded notions of IL. Dunn and Johnson-Brown contend that the fiercely strategic and agile Maroons were an information literate population. They were actively aware of their information needs, seeking out critical information, evaluating it, and applying it successfully to their scenario. The Maroons were able to continuously evade recapture, and they even defeated British troops using "a highly sophisticated information communication system, whereby slaves on the plantation would relay signals about the activities and plans of the British."[3] This local and historic example challenges some accepted Western notions of IL while also echoing the critical role of IL to lifelong learning and survival in developing nations.

The current scenario in the English-speaking Caribbean sees students arriving at higher education institutions with limited exposure to libraries, librarians, and modern information architecture. Library anxiety levels are high, as most new students come to university and college campuses not having prior access to a multistory library or online catalog. Ingrid Iton posits that this may be attributed to the absence of school libraries and librarians at the high school level on most islands in the region.[4] Cherrell Shelley-Robinson's extensive survey on school libraries in Jamaica found that although spaces were identified for libraries, they were mostly inappropriate because they are small and underresourced.[5]

Marisa McPherson identified both institutional and personal factors for library anxiety among university students in the Caribbean. Institutional factors included the large size of the libraries and the layout and organization of floors and collections; personal factors included a lack of relevant information literacy skills and absence of previous library experience.[6] Some of the debates surrounding the Association of College and Resource Libraries' (ACRL) *Framework for Information Literacy for Higher Education* were fodder for Caribbean librarians seeking to ensure that the challenges our students face would not be exasperated by a new, unexplored, unsettling, and elitist paradigm.[7]

PRE-*FRAMEWORK* IL AT THE UWI MONA LIBRARY

Over the last two decades, there has been increased exploration and focus on IL skills and competencies in the academic arena. In fact, most of the writings on IL have come out of or have their genesis in the academy. Academic librarians have been at the forefront of the awakening to IL and lobbied for the evolution from "bibliographic instruction" to "user education sessions" and for the variety and range of nomenclatures for information literacy education. The concentrated focus on

IL in higher education has resulted in a high number of documented conceptual frameworks, guidelines, and approaches to IL. While there is also a high level of information literacy activity in some Caribbean libraries, there is limited published literature exploring IL in higher education in the Caribbean.[8] Some proponents of note include Verna George and Paulette Kerr,[9] Ingrid Iton,[10] Cherrell Shelley-Robinson,[11] Kerry Ann Rodney-Wellington,[12] and Paulette Stewart.[13]

Information literacy as practice has, however, been recognized at the highest level of the UWI. In the most recent strategic plans of the UWI—in 2007–2012,[14] 2012–2017,[15] and 2017–2022[16]—the administration has deemed being information literate as incumbent to the profile of the UWI graduate. This is clearly articulated in the university's current *Strategic Plan 2017–2022*, which outlines the distinctive UWI graduate for the twenty-first century as one "who has a regional frame of reference and exemplifies the following attributes: is a critical and creative thinker, a problem solver, an effective communicator, knowledgeable and informed, competent, a leader, a team player, IT skilled and *information literate*, socially and culturally responsive, ethical, innovative and entrepreneurial, and a lifelong, self-motivated learner."[17] IL is thus identified as an integral quality of a graduate of the UWI.

The UWI Mona, Jamaica, campus has been particularly proactive in its engagement with IL. The campus is the oldest of the UWI and currently serves a student population of 18,700 via faculties of engineering, humanities and education, law, medical sciences, science and technology, and sport.[18] The establishment of the Mona Information Literacy Unit (MILU) at the Mona Library in 2001 firmly established the importance of IL on the UWI's education agenda. MILU would later become a critical teaching and learning influencer in the UWI Library system. In the 2017–2018 academic year, MILU offered approximately 269 sessions to more than 7,000 students. MILU aims to ensure that students are equipped with the necessary IL competencies—now *Framework* "understandings"—to empower them to become lifelong learners as prescribed by the university administration. These competencies, abilities, or skills were integrally connected to the ACRL *Information Literacy Competency Standards for Higher Education*,[19] which guided policy and practice in the MILU. The MILU was initially developed to "coordinate and structure the delivery of training courses to the Library's clients."[20] Its mandate, however, was much broader and sought in 2001 to "expand Information Literacy instruction beyond the discrete skills taught in the then Bibliographic Instruction Programme; promote an integrated approach to IL through collaboration with faculty, librarians, and administrators; as well as promote lifelong learning through the provision of instruction in critical thinking."[21]

Essential to the effective operations of the new unit was a deliberate plan of developing librarians to address the apathy and culture of resistance to teaching and equip them with new pedagogies and approaches. The thrust of the program centered on the concept of immersion. This involved intense training of librarians in IL concepts and theoretical frameworks in a context of reflective and reflexive learning and engagement and within an atmosphere of critical thinking on the role and place of IL

in addressing the deficits in students' learning that they observed in different aspects of their work. The role of the librarian as a teacher was emphasized. Expertise was sought from the campus Instructional Development Unit (now the Centre for Excellence in Teaching and Learning, or CETL) on course delivery and teaching methods. Two librarians participated in the ACRL Immersion Program in 2001.

Significant work has also been done by the unit to promote and create buy-in for IL among university campus stakeholders as well as the outside community. Over the last eighteen years, the Mona IL Programme has built on a collaborative approach where faculty, librarians, and administrators work together to ensure that critical-thinking competencies are included in the curriculum at all levels. While there is a focus on developing competencies through sessions in foundation critical reading and writing courses (first-year English writing equivalent), the unit collaborates with faculty in offering content in specific disciplines including chemistry, humanities, psychology, education, law, and medical sciences. MILU initiatives also include workshops for students and faculty held in collaboration with the Department of Library and Information Studies (DLIS) and the Office of Graduate Studies and Research, and outreach through IL sessions to high schools and colleges across the island. The DLIS has offered several workshops for teachers and information professionals on IL with an emphasis placed on integrating IL into the college curriculum as well as planning and teaching IL instruction.[22]

The UWI hopes that "graduates will acquire both IT and information literacy skills, which are seen as essential parts of a wider concept of knowledge creation."[23] MILU achieves this mainly through sessions that are integrated into required first-year foundation courses. Whether UWI graduates are indeed information literate is an area in need of research and further inquiry.

There are challenges facing the UWI libraries in contributing to the creation of a distinctive UWI graduate equipped with requisite competencies. Major issues were first proffered in 2008 by the then-coordinator of MILU in internal correspondence and remain areas of concern for all UWI libraries in 2019. These issues include the absence of a campus/university-wide IL policy, limited assessment of student learning, chronic budgetary constraints leading to resource constraints such as outdated teaching labs and network instabilities, and an increasing and diverse student population without the requisite staff allocation. The issues of teaching and instructional design training have also arisen in recent times as the role of the librarian as teacher has become more seminal to the work of engaging with students. Kerr also identified disconnects in the program, in which the expectation of what IL would achieve was not always realized in practice as students emerged from IL instruction sessions with a seeming inability to effectively access and use information in other academic endeavors.[24]

UWI MONA LIBRARY ENGAGEMENT WITH THE ACRL

On the heels of the approval of the *Information Literacy Competency Standards for Higher Education* by the board of the ACRL in January 2000, the UWI Mona cam-

pus sought to institute its own instructional unit in information literacy, guided by the new ACRL *Standards*. The development of MILU commenced in early 2000 as the Mona Information Literacy Skills Unit (MILS) with the appointment of an information literacy unit coordinator. In keeping with the *Standards*, MILU librarians were encouraged to attain formal training in IL education at the tertiary level and gain experience as instructors in information education.

With the transition from bibliographic instruction to information literacy instruction in 2001, the renamed Mona Information Literacy Unit embarked on campus-wide sensitization and promotion of the concept of IL via presentations to academic and senior administrative staff. Collaborative partnerships among librarians, faculty, and administrators to develop an integrated program in IL instruction were critical to the library's involvement in two main compulsory English courses (FD10A: English for Academic Purposes and UC120: Language Exposition and Argument). MILU also sought to expand teaching/learning resources through the development of new online and print instructional materials.

The ACRL continues to influence polices, procedure, and the practice of IL at the UWI Mona campus; to date, eight librarians have participated in ACRL immersion programs since 2001. However, the information landscape has changed significantly over the last eighteen years, and though now seemingly secure, the somewhat prescriptive approach of the *Standards* is no longer reflective of the complex and nuanced information ecosystem. MILU has therefore attempted to keep pace with current global approaches to IL in higher education. The library's transition to the ACRL *Framework*, which utilizes threshold/essential conceptual approaches, was considered a natural progression for MILU staff. Though not ignorant of varied critiques of the *Framework*, MILU saw the transition as an important opportunity for conversation, engagement, and collaboration between the librarians, students, and faculty, especially since the *Framework* focuses more widely on a critical approach toward demonstrating understanding versus a linear set of skills and techniques. While not a panacea for the perceived and documented ills of IL education, the approaches employed in the *Framework* appear to address some of the contradictions identified in the practice of information literacy that were rooted and grounded in the ACRL *Standards* and to actualize articulated goals of IL.[25]

STAGGERED ADOPTION OF THE ACRL *FRAMEWORK* AT THE UWI MONA LIBRARY

Megan Oakleaf's words of sanction—"Essentially, librarians can use the *Framework* as inspiration to focus on concepts, rather than exclusively on tools and techniques, and those concepts can be added or subtracted as student and faculty needs change"[26]—guided the UWI library's phased adoption of the ACRL *Framework*. The *Framework* should not be viewed with skepticism. It is an opportunity for "inspiration," offering librarians the opportunity to have more nuanced discussions in sessions and activity-based lesson plans.[27] Sessions may ultimately be more engaging

and resonate more with students. This is the desired outcome of UWI Mona IL sessions and is not necessarily the current result from all sessions. Exploration of the filed ACRL *Framework* document alludes to how it may be used to reposition the library at the center of campus discussions and students' minds:

> The *Framework* opens the way for librarians, faculty, and other institutional partners to redesign instruction sessions, assignments, courses, and even curricula; to connect IL with student success initiatives; to collaborate on pedagogical research and involve students themselves in that research; and to create wider conversations about student learning, the scholarship of teaching and learning, and the assessment of learning on local campuses and beyond.[28]

First Steps with the *Framework*

The adoption of the *Framework* at the UWI Mona Library is an ongoing process. This process initially required sensitization, dialogue, session redesign, new pedagogical strategies, and ultimately forging ahead amid indecision from some partners. To set a practical tone for the *Framework*, MILU facilitated a training workshop on student engagement techniques for all instruction librarians. Teaching apprehension is common among librarians, many of whom have limited teacher training, who are increasingly being called to conduct learning events. In collaboration with the CETL, MILU conducted a Train the Trainers workshop for teaching librarians at the Mona Library in July 2015, following the filing of the *Framework*. The workshop aimed to marry the *Framework* to student engagement by developing librarians' classroom/student engagement techniques and providing an overview of the aspects of this new approach.

Group sessions of livestreamed webinars were also facilitated and ACRL and Instruction Section *Framework*-themed webinars (teaching strategies and curriculum) were circulated for UWI Mona librarians to continue to become more familiar with and to discuss the adoption of the new way of teaching. Faculty were also sensitized to the *Framework* through the dissemination of materials and meetings with foundations session lecturers. Two Mona librarians attended ACRL immersion in summer 2017 for exposure to using the *Framework* in IL practice. Mona librarians were receptive to the *Framework* in theory; a few seasoned instructors even indicated that their current teaching approach would require only minimal modification for alignment. Some librarians, however, were openly critical and resistant, indicating that a new prescription from a North American standards body was not necessarily mandatory for a local Caribbean setting.

Focusing on the *Framework*

MILU IL sessions provide face-to-face, librarian-taught instruction to almost three thousand first-year students annually via single two-hour sessions, complemented by a session worksheet. Classroom instruction is conducted by a single

librarian to groups ranging from twenty to forty students and a faculty member. In the 2016–2017 academic year, MILU commenced implicitly using three frames as a guiding ideology:[29] Searching as Strategic Exploration, Research as Inquiry, and Authority Is Constructed and Contextual.[30] These frames were determined as dominant through mapping of the previous library foundation course, which focused on the three main areas/IL standards: refining a topic, keyword selection, and credibility, plagiarism, and citation. The *Framework* session redesign then progressed to mapping the content of the current one-shot session using the frames. This deliberate action was completed easily, as content remained mostly the same but the teaching approach to the topic changed. The two-hour session was broken down into frame-based and time-bound sections. This new *Framework* approach would not involve the language of the frames but instead required the development of a probing and highly interactive mind-set, which was reinforced with guidance notes in foundation course review sessions with teaching librarians.

Framework Teaching Tools

For the introduction of the *Framework*, pruning of a somewhat static PowerPoint presentation used in these sessions resulted in a drastic reduction in the number of slides from approximately thirty to fifteen. Librarians would no longer be burdened with covering slides of content, instead intently digging at students' own knowledge with dialogue. Two new probing/discussion exercises were inserted to stimulate in-class discussion. Librarians were also guided in requirements for using the *Framework* that include focused queries, librarian-initiated dialogue, and moving away from the usual onslaught of PowerPoint slides and performance of tasks. This would foster a focused approach on the "*whys* of information and research, rather than the *hows*"[31] as well as the targeting of known trouble spots for students.

Our evaluation/assessment tool (a five-question online quiz at the end of each session) had previously indicated that the areas of refining the topic and keyword searching presented the greatest challenge to students. Sessions would now be more demanding for instruction librarians than previous lecture-style sessions, as there was a need for elevated levels of engagement through exercises and prompted discussions. Probing questions that encouraged reflection about students' existing knowledge about the information process would now be the starting point for further exploration. As a session icebreaker, students could be asked, "How confident are you about your research skills?" and then "Why?" Or "Tell me the steps in your library research process . . ." before these are explored in the structure/content of the session.

The introduction of the use of the Credo Reference database as a mandatory starting point for background information and refining topics and keywords added a new technological dimension to our sessions.[32] The database's "Mind Map" feature, which is a brainstorming tool that allows for a visual representation of the results obtained with use of search term(s) at or near the center and related terms radiating out, sparked new avenues for exploration and understanding for students in the early

stages of narrowing their research topics. The hands-on exploration of databases after discussions offers support to exploring the frame Searching as Strategic Exploration, which is a dominant theme in the library session. When teaching these sessions, librarians can traverse the aisles and experience or assist with the evolution of students' search terms and research process. The *Framework* indicates that novice learners like our foundation course students may use "few search strategies" and "search a limited set of resources." However, as the session progresses students often realize that effective searching requires persistence and more complex and nuanced search strategies. The increased interactivity and hands-on nature of *Framework* sessions are supported in the work of Don Latham, Melissa Gross, and Heidi Julien.[33]

The focus on only three frames in these one-shot sessions sought to avert a sense of large-scale change, as well as to offer foci for application of the *Framework.* Despite the changes in teaching approach to IL sessions, there has been no change in the structured assessment of the sessions. In-session assessment may attest to the direction of a session; however, IL sessions are still assessed by a five-question online quiz that includes an open-ended question about students' overall experience (session content, presenter's style, classroom setting, etc.). Feedback from this quiz would serve to provide some evidence of the impact of the *Framework* approach.

The opportunity for peer observation of librarians' new *Framework* approach to teaching sessions was facilitated through the introduction of voluntary peer-to-peer assessment. A template for areas for review (session organization, presentation/performance, high-quality aspects, classroom engagement, and suggestions) was circulated for librarians to gain informal critique and affirmation of their sessions. Most librarians, however, did not explore this avenue for feedback. This practice of librarians as critical friends has been recently explored in the literature by Laura Dimmit, Caitlan Maxwell, and Chelsea Nesvig, who initiated peer observation to a small group of three instruction librarians doing one-shot sessions as an opportunity to offer constructive, "assessment driven" feedback.[34] Using the framework of "critical friendship," which requires dialogue, openness, and trust, the peer observation process included pre- and post-observation meetings to gather context and learner reflections. The observations were formalized by a letter written by a critical friend outlining feedback that could also be used for professional assessment purposes. Using the structure now set out by Dimmit and colleagues, this is a model worthy of revisiting for future sessions.

Teething Pains/Challenges

The libraries across all UWI campuses have attempted to address some of the issues raised with the introduction of the *Framework* at the UWI Mona Library in order to facilitate adoption at other UWI campuses. Through the establishment of a cross-campus IL team, the matter of a common philosophy, policy, and development of a program of work are being addressed. The goal of this team is the development of a university-wide IL policy and the adoption of a unified approach to IL programs

across campuses. Currently, there remains some hesitation by librarians on our other UWI campuses about the wholesale adoption of the *Framework*. This has sparked discussions about the use of standards from other groups, such as the Chartered Institute of Library and Information Professionals (CILIP). Some librarians have suggested that with the diverse student population at the UWI, some students will be disadvantaged by introducing them to IL within the metaphors of the *Framework*.

Iton speaks to the issue of culturally specific programs in her discussion on the implementation of virtual reference services. She opines that oral societies like those in the Caribbean must consider the "cultural influences [that become] a crucial determinant in the choice between the traditional and [other modes] of service delivery."[35] The time limit of two hours for library sessions may also be considered a challenge in fully exploring the *Framework* in one-shot sessions. Also, teaching infrastructure has also been posited by librarians as a challenge in interacting with students. Currently, IL sessions at Mona are conducted in two static, rowed computer labs. These spaces do not easily foster peer-to-peer teaching or group work, and they have some acoustical issues that can make student engagement even more difficult.

Feedback was also sought from lecturers and tutors in the foundation courses. Most lecturers and tutors often stay nearby the library IL session and can offer insightful commentary. Responses were limited, but an important comment speaks to the disparity in the level of preparation and ultimately engagement by the team of librarians conducting the sessions. A lecturer indicated, "It is advisable that all library instructors are prepared and capable of engaging the students for the two hours. Some instructors are excellent, and others are not. Instructors are also to prepare the topics (research essay topics) that they have been given instead of generic topics that are not always related to the discipline."

Success: The Voices of Students

Table 11.1 suggests some measure of success with the introduction of the *Framework*. The comments were received from an evaluative online quiz conducted at the end of each two-hour session within the foundation courses subsequent to the UWI Mona Library's initial implementation of a phased approach to the adoption of the *Framework*. In comparison to previous years, student comments were overwhelmingly positive. They noted that sessions were useful to them and offered student interaction/participation as a qualifier.

Themes that emerge from the students' responses, displayed in figure 11.1, suggest that while students have high expectations for instruction librarians and still expect teacher-led sessions, they prefer a delivery that is conversational and engaging. The orientation toward engaging and collaborative learning is vital for fostering critical thinking and developing graduates with the IL skills necessary for lifelong learning. Students are also concerned with content relevance and their ability to apply what they learn to their academic pursuits. Comments regarding the knowledge gained in utilizing library resources (search engines, databases, OPACs) to conduct research

Table 11.1. Students' Voices

Positive	*Students' verbatim comments on summer 2017 IL sessions*
C1	The session was very informative. It was also helped by the fact that student participation was encouraged.
C2	Very informative. Research is an active, engaging process and there are specific protocols unique to each field. If a writer requires notification and credibility these protocols must be consciously observed.
C3	I didn't fall asleep because the teacher was able to interact with the class while giving us (pointers) and explained each point effectively.
C4	The presenter interacted with students. Offered help where necessary. I would like a soft or hard copy of the presentation provided by librarian in order to review what was discussed.
C5	Over all the session was very informative and interactive . I learnt new techniques in researching on my topic, which I am sure will help me a lot in writing any essay or documentation I may receive.
C6	personally found it alright since i was able to get informations on how i can create my essays more productive and effective.
C7	The session was ideal for a student aiming to pass **critical reading and writing** as well as to use in life's tasks.
C8	The teacher was rather informative. I personally enjoyed her interaction with the students. She also stressed the importance of using the librarians as a guiding tool. The content in itself was great and taught me a lot of information not previously known to me or recognized by me.
C9	I found it helpful particularly after receiving personal attention to ensure I was following during the session.

also indicate that students value learning that empowers them to more effectively engage with information resources for their academic pursuits. Though not as widespread, the physical environment and the general disposition of the facilitator also appear to be important aspects of the learning experience for students.

The Way Forward

The limited success of the implementation of the *Framework* at the UWI Mona Library was achieved by advocating for the importance of IL on the political front with librarians and faculty. This was done through conversations, webinars, workshops, and sharing opportunities for engagement on IL. There is a need for more IL advocates to approach faculty and stakeholders and for greater buy-in from librarians. It is hoped that in the second iteration of the process, the library will exhibit greater support for the approach. The work of liaison librarians in reaching out to specific faculty is critical to realizing gains in this process. Also core to the process is identifying key subject courses, initiatives, or events for further integration in the curriculum beyond the first-year foundation courses. Most important is the identi-

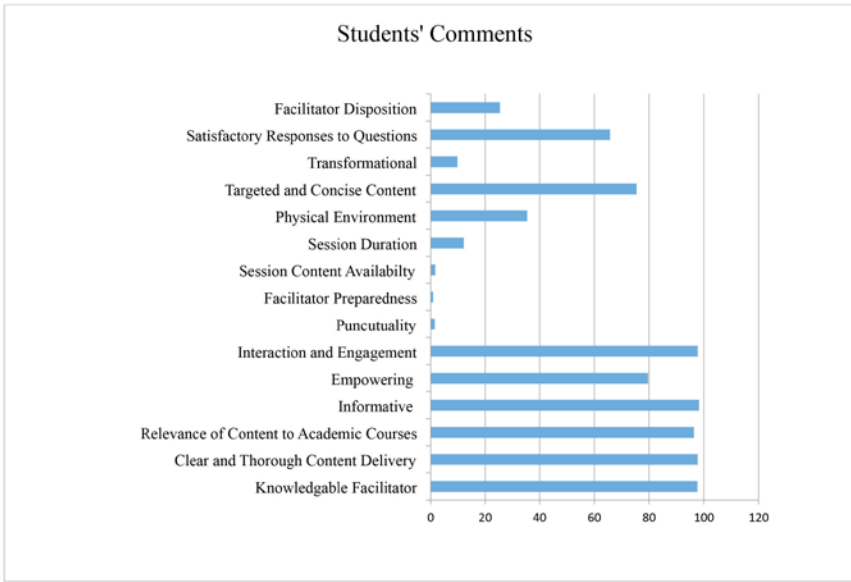

Figure 11.1. Emerging Themes from Students' Feedback on Summer 2017 IL Sessions

fication of emotional as well as practical arguments for IL/*Framework* engagement. The *Framework* was and still is a shiny new marketing tool.

The chapter explores the first round of the implementation of the *Framework* at the UWI Mona Library. Anecdotal results of higher levels of student engagement via evaluation serve as a sign that the *Framework* should be further explored. Positive student feedback, when shared, acts a motivator to program coordinators, administrators, faculty, and instruction librarians. Some colleagues still have reservations about full *Framework* immersion, but it is our hope that in time, and through research and reflective exploration, they will be more open to the discourses. The way forward will include further training and sensitization of librarians and faculty, relevant assessment of the impact on student's learning, development of campus-wide policy, as well as the creation of a bank/sandbox of assistive and Caribbean-specific teaching tools to ensure continued relevance. Adapting frames for local/regional context and creating more culturally specific examples may yield deeper engagement.

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12

The Librarian's Journey Begins: Finding Pedagogical Authority and Creativity in the ACRL *Framework*

Liza Oldham

I was three years in to my career as an instructional librarian when the Association of College and Research Libraries (ACRL) formally adopted the *Framework for Information Literacy for Higher Education*,[1] and I distinctly remember the apprehension I had when reading it through the first time: *Oh no . . . this is really different.* At that point, I was more than halfway through developing a four-year information literacy curriculum that was in its first year of implementation. I had just gotten a grip on my teaching style. Students were also finally laughing at my one-liners (somewhat). Had all that just been rendered obsolete? Did I have to scrap all my lesson plans and start over? Had the role of an academic librarian been irrevocably altered with the click of a button over at the ACRL offices in Chicago?

The short answer to that swirl of questions (not all of them mine)[2] was, of course, "no." The core of our profession had not been redefined. My pedagogical philosophy to meet students where they are, engage and empower them to act, and then reflect upon the whole process did not and has not changed. In embracing the *Framework*, I did not have to ditch my lesson plans or light my curriculum on fire. I remained, and still am, an instructional librarian who helps students grow as critical thinkers and active researchers.

Looking back, I am a little amazed at the momentary mental paralysis the *Framework* originally induced in me. As an educator, I know what to expect when students are challenged with something new, particularly when it comes to a topic or skill they feel they have already mastered. The responses can range from outright frustration to feigned nonchalance to silent rejection. Much like the archetypal hero of Joseph Campbell's monomyth *The Hero with a Thousand Faces*, who refuses the initial call to adventure,[3] students often freeze before the dawning realization that their previously established research behaviors may not serve them in the coming project. They sense the impending necessity of leaving their comfort zone, that "the familiar . . . has been

outgrown; the old concepts, ideals, and emotional patterns no longer fit; the time for the passing of a threshold is at hand."[4] Naturally, confusion or reticence to change sets in.[5] Students, however, are not the only ones who must confront thresholds or require aid to pass on to the next phase of an adventure.

With the *Framework*, I encountered a learning threshold of my own, one that thrust me into an information literacy journey where I was the protagonist instead of a supporting character. This was hardly a comfortable spot for me, nor, I imagine, is it for other academic librarians who seek to practice student-centered instructional design. In this pedagogical approach, it is the learner's journey that matters.[6] Successful application puts the emphasis on what students learn, not what educators teach.[7] Choosing to focus on *my* journey—my paradigm shift with regard to the *Framework*—felt almost selfish, like I was missing the point. However, in a 2015 article, Colleen Burgess, research and instructional services librarian at Western University in London, Ontario, noted that such a change in concentration was one of the exciting possibilities that could come out of the *Framework*: "How might my teaching evolve in order to facilitate a space in which the desired student knowledge practices and dispositions can flourish? The *Framework* in this light is an opportunity for instructors to . . . [adopt] a beginner's frame of mind, as students themselves committed to lifelong learning."[8]

My fledgling reaction to the *Framework*, a document that asks practitioners of all experience levels to reconsider and perhaps change how they teach information literacy skills,[9] struck me as right out of Campbell's text. I initially "refused the call" and saw only the negative.[10] This new approach seemed too theoretical, too open to interpretation, and too lacking in active verbs to be integrated into my hands-on pedagogical practice. With the previous *Information Literacy Competency Standards for Higher Education*, academic librarians like me at least had action statements in the form of complete sentences to guide us in our lesson planning: "The information literate student determines the nature and extent of the information needed."[11] To go from this outcome-driven principle to the ambiguous phrase "Research as Inquiry" was unmooring, especially as a member of a profession that frequently suffers from a lack of systematic pedagogical training, whether in graduate school or on the job.[12]

Yet not all who initially hesitate before challenges are resistant forever, for, per Campbell, "it is only by advancing beyond those bounds . . . that the individual passes . . . into a new zone of experience. . . . The adventure is always and everywhere a passage beyond the veil of the known into the unknown; . . . for anyone with competence and courage the danger fades."[13] So how did I come to accept the call and cross this threshold? What magical pedagogical elixir can I share with other adventuring librarians charged with implementing the *Framework* in their research instruction? It will not surprise any readers of Campbell or consumers of pop culture to learn that the journey is never truly over and that the magic, ultimately, comes from within. With that universality in mind, though, I offer the specifics of this particular adventure in my career in the hopes that it will help other professionals who might be stopped at the threshold.

A major arc in my journey was positioning the textual fuzziness of the *Framework* as an advantage, not a barrier. Taken at its most literal, each frame is just that: a frame. As academic and instructional librarians, we have the pedagogical license to experiment with the educational picture inside that frame. I am certain I will never stop learning how to teach information literacy and research skills more effectively and creatively, but I knew this before the *Framework* was published and formally adopted. Ultimately, my journey of figuring out how to incorporate the *Framework* into my research instruction ended with a more meaningful transformation, that of how I viewed and approached my own authority as an educator and information professional.

THE CALL TO ADVENTURE: IDENTIFY THE STARTING POINT

There is a laissez-faire-charged line in the introduction to the *Framework* that intimidates as much as it inspires: "Neither the knowledge practices nor the dispositions that support each concept are intended to prescribe what local institutions should do in using the *Framework*; each library and its partners on campus will need to deploy these frames to best fit their own situation, including designing learning outcomes."[14] Essentially, librarians can do whatever they want in the classroom, at the help desk, and wherever else information literacy instruction may occur. In my aforementioned initial apprehension, I read this as the ACRL equivalent of a 1980s babysitting movie premise,[15] with the organization essentially telling academic librarians, "You're in charge now. Of everything. So . . . bye!" Years of reflection and implementation later, I now read this section as a license for creativity. It grants librarians the pedagogical authority to fill the educational frame(s) at our institutions with what makes the most sense for our students and faculty. So yes, we are in charge. But we are definitely not alone in this endeavor. On a macro level, academic librarians have three partners. First is the individual institution—its values, resources, budget, and curriculum all play a part in what librarians are able to implement and when. Second and third are the faculty and students at that institution and their respective socioeconomic backgrounds, races, and genders. All three partners contribute to the educational picture in different ways, and identifying the characteristics of each is an important first step in the journey.

When considering how to implement the *Framework* at Phillips Academy (often called Andover), a coeducational residential high school located in Andover, Massachusetts, I began with some basic institutional data. One of Andover's core values includes "Academic Excellence," which emphasizes taking "intellectual risks" along with "independent learning, critical thinking, creative collaboration."[16] This is reflected in the rigorous curriculum, which operates on the trimester system and offers over 300 courses, including 150 electives and student-designed, term-long

projects. Around 80 percent of the 226 faculty members hold advanced degrees. In 2018, approximately 1,100 students attended Andover, representing forty-four states and forty-nine countries; nearly half identified as people of color, and 47 percent received some form of financial aid.[17] Matriculating Andover students are also academically diverse, with 45 percent coming from public schools, 36 percent from private schools, 15 percent from international schools, and the last 4 percent from either a parochial or homeschooling environment. This handful of statistics reveals how Andover intentionally seeks to prepare students for university environments by mirroring the demographics and academic rigor, albeit in a high school setting.

The library at Andover also purposefully functions like that of a small liberal arts college. Again, some statistics to set the scene: The library's collection includes more than eighty thousand books, subscriptions to more than one hundred databases, and access to thousands of e-books and films across multiple platforms. The library also maintains a membership in the North of Boston Library Exchange (NOBLE), a consortium of more than twenty libraries that includes seven nearby colleges and universities. Library staff is split between access and research services, with the instructional librarians serving as individual liaisons to specific academic departments across campus. In other words, this is a financially well-supported library with a number of staff members dedicated to the various nonnegotiable areas and tasks required to make the place run smoothly and efficiently. Because of this, Andover's library has the privilege of being able to allocate focus to things like strategic planning and educational values without having to sacrifice essential duties. This was the scene of my "call to adventure," and I was also equipped with the distinct advantages of a supportive director, a collegial and creative team of fellow instructional librarians, and time. None of this is to say that there were no challenges and it was as easy as 1-2-3. Rather, it is vital to acknowledge these assets when reflecting on how the *Framework* was implemented at Andover because this reality is not fully replicable across the board at other institutions. What is replicable, though, is the environmental scan. Before filling the frame, academic librarians must have a firm grasp of their institutional setting: the advantages and disadvantages, the established challenges and possible supporters, and an understanding of what has been done before.

Recognizing the state of information literacy instruction at Andover in 2013 was vital to both moving the program forward and my own professional development. Like that of many colleges and universities, the library at Phillips Academy was decades old and had been stewarded by many dedicated, passionate librarians throughout the years. I was able to make the changes I did only because of the solid foundation built by those information professionals who had come before me.[18] The most critical piece of my inheritance was the established relationship between the History Department and the library. Librarians had long worked with several history faculty members to develop a tiered approach to research instruction. The first- and second-year history curricula had been in play for about fifteen years, and accord-

ingly, librarians created corresponding set lesson plans, LibGuides, and reserve lists. This is what the instruction program looked like when I arrived at Phillips Academy:

- Year One: History 100 (three consecutive terms)
  - Research topics included the rise of Islam, medieval Europe, imperial China, world trade networks prior to 1600, and the Renaissance.
  - Library Skills: Finding, evaluating, and using reference, secondary, and primary sources; using library subscription databases; building search vocabulary skills with broader, narrower, and related terms; and plagiarism and *Chicago Manual of Style* citations.
- Year Two: History 200 (one term)
  - Research topics included West African cities and societies, pre-Columbian empires, transatlantic slave trade, slave revolts and the Haitian Revolution, and the development of economic structures and piracy in the Atlantic world.
  - Library Skills: Review the skills learned over the course of History 100, with special focus on finding, evaluating, and using secondary and primary sources; introduction to scholarly journal articles.
- Year Three: History 300 (three consecutive terms)
  - A survey of American history, with the capstone research project of the final term being a primary source-based, thesis-driven paper on an American history topic of the student's choosing.
  - Library Skills: Review of the skills learned in History 100 and 200, with special focus on finding, using, and evaluating primary sources; finding and evaluating scholarly journal articles; and advanced website searching.
- Year Four: 500-level term—contained electives on a variety of topics
  - Library Skills: Examples include finding data and statistics for the economics course, and incorporating contemporary and international news sources for a comparative government class.

Previous librarians tailored the instruction program to the needs of the History Department, which had long been the library's biggest and most consistent customer because of the above curriculum. Most long-term history faculty members brought their classes to the library for research instruction on the previously described skills—most, but not all.

I began by individually contacting all history faculty members—regardless of whether they had brought their students to the library for instruction—at the *end* of the term as well as the start. I asked how the ending term's research projects had gone and if they had noticed any issues with their students' work, particularly when it came to citation or source quality. My reasons for choosing these topics were threefold: one, the most common questions we got at the help desk usually fell under these two categories. Two, if I or a colleague had worked with the teacher and covered those topics, I wanted to know how well students had put those skills into action. Third and finally, if the teacher was one who had *not* brought students in

for instruction, to let her or him know that these skills were on the table as possible instruction points and that there was someone on campus (a librarian!) who was ready and willing to help.

Eventually, this strategy paid off. Not everyone responded right away, but a couple did. One was concerned that by asking a librarian to come to the classroom, students would be subjected to a thirty-minute lecture on how to search a database. I assured the teacher that this was not my instructional style and provided a succinct lesson plan that aligned with the faculty member's assignment prompt to help assuage any fears of wasted classroom time. It also helped to have made a difference in student skill acquisition in the eyes of established faculty members, who then spread the good word to their colleagues. Within two years, every faculty member who taught History 100 and 200 brought their class to the library at least once a term for research instruction. My colleagues and I developed new lesson plans on website assessment, evaluating artwork and cultural objects as primary sources, and note-taking, based on feedback from faculty and conversations with students. The library had a solid information literacy instruction playbook, all based on the ACRL *Standards*. Then, in 2015, the History Department announced it would be changing its curriculum for History 100 and 200. Now students would take two terms of History 100 during their first year at Andover and two terms of History 200 during their sophomore year. The History Department was considering mandating a research component in at least one term for both 100 and 200. I advocated for a required research project in all four terms and got three: both terms of History 100 and the first term of History 200. The curricular topics would be different, but I knew I could adapt the library's current instruction program to make it work. After all, research skills stay the same even when the research topic itself changes.

And then came the *Framework*.

THE BELLY OF THE WHALE: FROM *STANDARDS* TO *FRAMEWORK*

Between the *Framework* and the new history curriculum, transformation was inevitably on the horizon. Campbell calls this stage of the journey "the belly of the whale" because it represents the point of no return. The adventurer, "swallowed into the unknown,"[19] now knows too much to return to his or her previous state; moving forward is unavoidable. I could not teach the same lesson plans because the History Department was changing its course topics and assignments—annotated bibliographies, podcasts, mind maps, and curated primary source collections were now established options for research projects alongside the traditional thesis-driven essay. My information literacy instruction needed to be just as dynamic and fine-tuned as the previous iteration to both enable student success and cement the integration of the library and research into the updated history curriculum. I had fresh frames to fill and also the *Framework* itself. In both my home institution and

my profession writ large, I had the opportunity to challenge my own thresholds as an educator.

The more I read about the *Framework*, the more teaching possibilities I saw in its conceptual nature and constructivist approach.[20] I also found critiques of the *Standards* that threw its limitations into sharp relief and articulated some of the pedagogical hitches I had experienced myself in the classroom. A 2015 article by Nancy M. Foasberg, humanities librarian and assistant professor at Queens College, City University of New York, put it best when she noted that the *Standards* presume to "present information literacy as a set of abilities that [librarians] can evaluate through a checklist, . . . that information literate behaviors can be defined ahead of time by a body like ACRL, and that once learned, [those abilities] can be practiced in all situations."[21] Having this list of "observable behaviors" and viewing "information literacy as a set of universal skills" appears straightforward from an assessment point of view because students either can or cannot "perform" the task of information literacy.[22] However, this "binary logic" does not effectively serve as an indicator of student understanding because the information landscape is far more complex than simply "good" and "bad" sources.[23] I often saw my history students struggle to move past a black-and-white understanding of source credibility, but a curriculum centered around the *Framework* and its emphasis on threshold concepts could provide room for this type of growth.

Proposed by Jan Meyer and Ray Land, threshold concepts are complex ideas or topics within a particular discipline that students must grapple with before they can advance to a deeper comprehension in said area.[24] These concepts are separate entities from, though linked to, the so-called building blocks of a particular discipline,[25] or, as I now tend to call them with regard to information literacy, the "mechanics" of the research process. The mechanics are mainly those ideas or activities that most students think of when they imagine themselves "doing research" today—searching Google, taking notes, using a book, and so on.[26] Students often quickly get the hang of the mechanics because they have done similar tasks before, whether in school or recreationally.

Crucially though, this seemingly swift mastery of the mechanics often leads learners to display an inflated sense of their *overall* research abilities, precisely because the more basic skills feel familiar and doable.[27] A 2012 survey by Amy R. Hofer, Lori Townsend, and Korey Brunetti provided superb insight from multiple information literacy educators on this issue, one of whom posited that students essentially have come to believe their own hype: "They believe the rumors that they are tech savvy and are expert searchers . . . because the mass media is constantly telling them how Web savvy they are . . . [and that they have] excellent media handling skills."[28] Similarly, the history students I work with learn to distinguish between primary, secondary, and tertiary sources rather smoothly because categorizing is a concrete task they have likely done before at some point in their lives. This familiarity breeds self-assurance in students when beginning a research project, which in turn seemingly gives credence to the stereotype that they have those "excellent media handling skills"

and can therefore ably display expertise at any stage of the research process. However, determining source types is a skill that falls under the mechanics of research—a relatively discrete concept that students must understand before they can progress their information literacy skills, but, per Meyer and Land, does not "lead to a qualitatively different view of [the] subject matter."[29]

Threshold concepts, on the other hand, can do precisely that—transform a student's perspective. They represent learning "portals" that, once crossed, allow students to grasp previously inaccessible ideas, particularly those that present as discursively opaque or conceptually difficult.[30] Given this innate complexity, threshold concepts are also where students typically shut down or "get stuck."[31] When it comes to my aforementioned history students, one of the most common threshold concepts they struggle with is source authority.[32] They *believe* that they can articulate why one type of source would be more useful, credible, or valuable than another, but their analysis is surface-level at best. For instance, students are well-trained to denounce Wikipedia in class,[33] sometimes so much so that it seems as though the censure of that source is one of the mechanics of research. Despite this rote response, though, students struggle to explain *why* their teachers might truly object to its use beyond a desire to make research "hard." So they continue to use Wikipedia when presented with a research project, albeit often secretly out for fear of being "dinged" grade-wise.[34]

Knowing I wanted to create an instruction program and lesson plans that would engage and empower students to advance past thresholds like source authority, I arranged the frames in order of perceived difficulty for my students to ensure proper scaffolding. I also considered the type and progression of research assignments students receive in their history classes. This by no means is meant to say that the *Framework* has to be taught in a particular order. In fact, its purposefully "interconnected"[35] nature means that the concepts addressed in all six frames should be present in any well-constructed research prompt. Rather, my goal in ordering the frames was to establish when and where students will encounter these threshold concepts in the history curriculum, and thus the library's research curriculum, at my institution: Research as Inquiry, Searching as Strategic Exploration, Scholarship as Conversation, Authority Is Constructed and Contextual, Information Creation as a Process, Information Has Value.

After determining this order of frames and considering the implementation opportunities provided by the History Department, I decided to reorganize the library's *Framework*-based research program around the premise of moving students from research "mechanics" to "process" to "practice."[36] First-year students would master the mechanics in History 100 and secure a solid foundation (table 12.1). Then, in History 200, they would encounter more challenging, nuanced concepts and begin to consider both the process of research and their personal approaches, tactics, and mind-sets (table 12.2). Students would continue to develop and grapple with these ideas and habits during History 300, with the added challenge of an entirely self-directed research paper. With this curricular program in play, students should begin

Table 12.1. Knowledge Practices for History 100: Research Mechanics

Research as Inquiry	*Searching as Strategic Exploration*	*Scholarship as Conversation*	*Authority Is Constructed and Contextual*	*Information Creation as a Process*	*Information Has Value*
• break complex questions into a series of simpler sub-questions • organize information in meaningful ways • synthesize ideas gathered from multiple sources • draw reasonable conclusions based on the analysis and interpretation of information	• utilize divergent (e.g., brainstorming) and convergent (e.g., selecting the best source) thinking when searching • amass a diverse topic vocabulary and employ in their search (e.g., controlled vocabulary, keywords) • understand how information sources (i.e., books, databases, journals) are organized in order to access relevant information	• critically evaluate contributions made by others • cite the contributing work of others in their own information production • recognize that a given scholarly work may not represent the only or even the majority perspective on the issue	• define different types of authority, such as subject expertise, societal position (e.g., public office or title), or special experience (e.g., participating in a historic event) • use research tools and indicators of authority to determine the credibility of sources, understanding the elements that might temper this credibility	• seek out and evaluate the characteristics of an information source/product that indicate its underlying creation process • assess the fit between an information source/product, its creation process, and their own particular information need • recognize that information may be perceived differently based on the format in which it is packaged	• give credit to the original ideas of others through proper attribution and citation

Table 12.2. Knowledge Practices for History 200: Research Process

Research as Inquiry	*Searching as Strategic Exploration*	*Scholarship as Conversation*	*Authority Is Constructed and Contextual*	*Information Creation as a Process*	*Information Has Value*
• formulate questions for research based on information gaps or on reexamination of existing, possibly conflicting information • monitor gathered information and assess for gaps or weaknesses	• match information needs and search strategies to appropriate resource types • refine search strategies as necessary, based on search results	• identify the contribution that particular articles, books, and other scholarly pieces make to disciplinary knowledge • contribute to scholarly conversation through multiple modes, including guided discussion, a research paper or project, or presentation	• recognize that authoritative content may be packaged formally or informally and may include sources of all media types • acknowledge they are developing their own authoritative voices in a particular area and recognize the responsibilities this entails, including seeking accuracy and reliability, and respecting intellectual property	• articulate the traditional and emerging processes of information creation and dissemination in a particular discipline • develop, in their own creation processes, an understanding that their choices throughout will impact the final information product	• understand how and why some individuals or groups of individuals may be underrepresented or systematically marginalized within the systems that produce and disseminate information

to have an individual research practice by the time they reach their senior year at Phillips Academy, thus preparing them for college-level research and the various information literacy programs and thresholds offered therein.

MECHANICS TO PROCESS: AUTHORITY IS CONSTRUCTED AND CONTEXTUAL

A clear example of how I implemented the *Framework* at Phillips Academy with the mechanics-process-practice structure revolves around the fourth frame: Authority Is Constructed and Contextual. Helping students learn to evaluate sources, particularly online, is a staple lesson in the instructional librarian tool kit.[37] Myriad acronyms exist to guide learners through the process of evaluation, such as the CRAAP test or CARS,[38] though, as previously discussed with regard to the *Standards*, checklists alone are often "too limited in scope . . . [to] adequately address the evolving nature of the Internet and the information delivered through this medium."[39] However, a specific and methodical tool like this can be helpful for students as a form of scaffolding before they move on to higher level decision making.[40]

For my purposes, a checklist for website evaluation represents an excellent tool for those students learning the mechanics. It involves answering mostly close-ended questions, and though students occasionally struggle to find the pieces of information needed to check the box, they fully understand what is being asked of them. In my teaching, I eschew acronyms in favor of the more familiar and natural language of who, what, when, where, why (the Five Ws). Not only are students more likely to remember this progression of questions, it allows them to practice a Research as Inquiry concept: breaking a complex question—is this a trustworthy, credible website?—into a series of smaller subquestions: Who is responsible for this site? What type of site is it? When was the information on the site published? Where did the author get the information? Why does this website exist? The answers to those questions, not just their mere existence, are what students then evaluate in order to start recognizing "indicators of authority [that] determine the credibility of sources."[41]

In History 200, however, the checklist expands and requires students to think critically. The assignment through which I introduce this new version of the checklist is usually a short paper that asks students to answer a specific, predetermined research question. They must also create a separate annotated bibliography that evaluates the sources used to write the paper. Within that bibliography, students must include two websites: one that the student deemed credible and cited in the paper, and one that the student decided would not be appropriate to cite in an academic work. The annotations for both those websites must explain the student's reasoning. When I come to the class to cover source evaluation, I first review the mechanics and write the familiar Five Ws on the board. Then, I show students how they can deepen their analyses and evaluation with additional questions (table 12.3).

Table 12.3. Website Evaluation Checklist: Mechanics and Process

		Mechanics		*Process*
Who . . .	→	is responsible for the information on this site?	→	do I think is the intended audience?
What . . .	→	type of site or information is it?	→	does the information from this site add to my current understanding of the topic?
When . . .	→	was the information on the site published?	→	am I reading this information?
Where . . .	→	did the author/creator get the information?	→	else could I find similar information?
Why . . .	→	does this website exist?	→	is this site worthy of inclusion in my academic work?

By keeping the Five Ws format and mechanics questions, students see that their previous understanding of website evaluation remains valid, but also now appears limited in light of these new questions. Instead of just considering the source itself, students learn that they must now insert themselves into the evaluation, and they begin to recognize the value of their own experiences and opinions. This is the shift from general mechanics to individual process. I also purposefully altered the language of the new Five Ws to first-person present tense to further delineate the distinction—no two students can answer a question like "What does the information from this site add to *my current understanding* of the topic?" the same way.

After this brief discussion, we then do a series of sample Google searches together. I ask students to give me their initial impression of a particular site, then go through the mechanics questions. Does their gut reaction appear spot on, or does knowing the publisher or creator of the site change their evaluation? Then, as a class, we begin to explore and debate the process-centric Five Ws. In this group setting, the most effective and threshold-challenging question is often "Where else could I find this information?" Students see that a lot of the websites at the top of the results list—Wikipedia, History.com, the free version of *Britannica*, travel websites—often provide reference source–type information. We then discuss the value of that kind of topic overview, but also the fact that they, as History 200 students, are familiar with using reference databases and books from the library. The question I then pose to the class is: When just starting out on a research project, would you rather spend time evaluating a website that ultimately gives you something you could easily find through a library- (and teacher-)approved source? There is no right or wrong answer to this question. Students will frequently flat-out ask, "Which one is right? Which one do you want me to use?" When I tell them that the choice is ultimately theirs, you can practically hear the gears turning in their mind. This is the point when students truly begin to grapple with the threshold concepts embedded in this frame.

CONCLUSION: THE RETURN

The challenge of incorporating the *Framework* into the research instruction program at my institution forced me to grapple with both my thresholds as an educator and the limits of my lesson plans. Though initially intimidating, not having an ACRL-sanctioned list of learning outcomes allows librarians to take stock of their own institutions, resources, and strengths to create a truly unique research curriculum. Taking the time to go on an adventure of one's own allows us to return as more confident, capable, and creative information professionals. Then we can return to our more familiar role in Campbell's template: that of a mentor who bestows "supernatural aid" to adventuring students, providing magical amulets (search strategies) that will aid them in getting past the fearsome dragon (relying on Wikipedia or Google alone for academic research) that impedes their journey. Though hardly supernatural, active teaching, purposeful assignments, class discussion, or one-on-one conversations with a librarian can be one of the keys that helps students cross the threshold and begin to recognize the limits of their previous approaches.

NOTES

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III

EDUCATING FOR THE *FRAMEWORK*

13

Flexible Frameworks, New Paradigms: Examining Beliefs about the ACRL *Framework* to Grow Teaching Practice

Andrea Baer

The Association of College and Research Libraries' (ACRL) *Framework for Information Literacy for Higher Education* has marked a paradigmatic shift in library instruction for many academic instruction librarians. While its predecessor, the ACRL *Information Literacy Competency Standards for Higher Education*, described information literacy in terms of concrete skills and outcomes, the *Framework* foregrounds six interconnected conceptual understandings that reflect the larger significance of information literacy to lifelong learning, critical thinking, and engaged citizenship.[1] The document also has significant implications for librarians' roles as educators. Indeed, it is intended as a catalyst for librarians to explore and to grow integrative approaches to information literacy, both within and beyond the library classroom and through collaboration with fellow educators.

Librarians' evolving roles as educators are made explicit in the *Framework*'s introduction, which opens by presenting the *Framework* as "grow[ing] out of a belief that information literacy as an educational reform movement will realize its potential only through a richer, more complex set of core ideas." This emphasis on information literacy as educational reform is related to librarians' instructional roles and relationships to other educators at the end of the introduction:

> The *Framework* opens the way for librarians, faculty, and other institutional partners to redesign instruction sessions, assignments, courses, and even curricula; to connect information literacy with student success initiatives; to collaborate on pedagogical research and involve students themselves in that research; and to create wider conversations about student learning, the scholarship of teaching and learning, and the assessment of learning on local campuses and beyond.[2]

This expansive approach to information literacy understandably can feel overwhelming, particularly if a librarian's main instructional work occurs through one-shot

library sessions, as is the case for most teaching librarians. On the other hand, many librarians also report experiencing the *Framework* as refreshing and freeing because of its expansive and flexible nature and the possibilities it suggests for expanding library instruction beyond stand-alone library sessions.

My work in offering library professional development on the *Framework* suggests that a key to experiencing the *Framework* as a catalyst for new and creative possibilities is recognizing its flexibility. In contrast, perceptions of the *Framework* as a pedagogical prescription or mandate can be tremendous barriers to engaging with it constructively. A perception of the *Framework* as rigid can result in frustration and a sense of paralysis, while an understanding of it as flexible is more likely to increase confidence, enthusiasm, and creativity for instruction planning.

Although the *Framework* is intended to be flexible and to be adapted to local contexts, for various reasons librarians often do not experience the *Framework* as such. In this chapter I discuss how perceptions of the *Framework* and related beliefs about teaching and learning powerfully influence librarians' relationships to the *Framework*. More specifically, I consider how perceptions of the *Framework* as flexible or rigid often contribute to enthusiasm about or frustration with the document. I first consider the strong role that beliefs and assumptions generally play in teaching and learning. This discussion is informed by three key lines of inquiry: (1) educational research on the importance for teachers of reflecting on their pedagogical beliefs and practices, (2) Stephen Brookfield's work on "hunting assumptions" and critically reflective teaching practice,[3] and (3) Kenneth A. Strike and George J. Posner's revisionist theory of conceptual change.[4] The interrelated areas of research suggest that a key component of teacher development is the development of communities of practice, through which educators can investigate their beliefs and assumptions about teaching and learning and how they influence their pedagogical practices.

Finally, I relate this research and theories on the relationship between teachers' beliefs and pedagogical practice to library professional development on the *Framework* that I offer. This scholarship lays a foundation for considering the *Framework* and perceptions of it in terms of flexibility or rigidity. Such reflection can be a powerful way to foster creative and effective instructional approaches that are adapted to librarians' local contexts. I also suggest ways that such professional development can be responsive (1) to current and future librarians' prior knowledge, experiences, conceptions of and experiences with the *Framework* and (2) to the institutional, historical, and sociocultural contexts that influence them. Such an approach is essential to fostering reflective teaching practices that are driven by the inquiry, knowledge building, conversation, and curiosity that the *Framework* itself encourages.

THE *FRAMEWORK* AS A CATALYST FOR TEACHER REFLECTION: POSSIBILITIES AND CHALLENGES

Given that the *Framework* reflects for many librarians a paradigmatic shift in information literacy education, it is not surprising that beliefs about teaching and learning

are especially significant to engaging with the document. While its predecessor the *Standards* shares with the *Framework* an emphasis on critical thinking, educational reform, and a democratic and informed society, the *Framework* is unique in the degree of emphasis it places on complex and interconnected conceptual understandings of information literacy; on information literacy education as a shared responsibility of librarians, faculty, and students (introduction); and on librarians' shifting instructional roles.

Consider, for example, the *Framework* introduction's statement that students, teaching faculty, and librarians all have a significant responsibility to develop information literacy. Librarians' responsibility is described largely in terms of collaboration with all of these groups: "Librarians have a greater responsibility in identifying core ideas within their own knowledge domain that can extend learning for students, in creating a new cohesive curriculum for information literacy, and in collaborating more extensively with faculty."[5] This concept of shared responsibility has significant implications for librarianship, which has traditionally been a service-oriented profession that positions librarians as directly fulfilling user requests, more so than as equal partners with other educators. The *Framework* asserts that it "redefines the boundaries of what librarians teach and how they conceptualize the study of information within the curricula of higher education institutions."[6] Such a statement invites librarians to reconsider their instructional identities and roles, a process that is not always comfortable but that can be rewarding and even freeing.[7]

The *Framework*'s invitation to librarians to critically examine and perhaps reconsider their teacher identities is not a small task. This process can feel overwhelming, particularly given the tradition of skills-based library instruction, the predominance of one-shot library sessions, and obstacles to building and sustaining meaningful teaching partnerships. If a librarian's time and resources are limited (as is usually the case), being asked to rethink one's instructional approaches is understandably daunting, especially if the *Framework* is perceived to require a complete overhaul of a teaching practice or an instruction program. In contrast to the idea that the *Framework* necessitates immediately and radically reconstructing one's teaching (an idea that in my experience is implied in many frustrated librarian responses to the *Framework*), an understanding of the *Framework* as flexible and adaptable opens richer possibilities for using the *Framework* to spark critical reflection and creative pedagogical approaches. Because perceptions of the *Framework* play such an important role in librarians' (dis)engagement with it, it is essential for related professional development to create opportunities for reflection and exploration of participants' beliefs about and experiences with the *Framework*. The potentially generative nature of this reflective inquiry is illustrated by research on the relationship between prior beliefs and learning, as well as by scholarship on reflective practice and conceptual change.

PRIOR BELIEFS, PAST EXPERIENCES, AND LEARNING

Education research provides ample evidence that prior beliefs, knowledge, and experiences play a powerful role in how and what students learn, as well as in how teachers teach. In *How People Learn*, a book from the National Research Council that brings together decades of research on learning, the authors' first key pedagogical takeaway is that effective teaching encourages students to engage with their prior understandings.[8] As the authors explain, "Students come to the classroom with preconceptions about how the world works. If their initial understanding is not engaged, they may fail to grasp the new concepts and information that are taught, or they may learn from them for purposes of a test but revert to their preconceptions outside the classroom."[9] Such research shows that learning is optimized "when teachers pay attention to the knowledge and beliefs that learners bring to a learning task, use this knowledge as a starting point for new instruction, and monitor students' changing conceptions as instruction proceeds."[10] Moreover, effective learning often requires uncovering preexisting knowledge and beliefs that may be misinformed and that can be a hindrance to later learning. Investigating preexisting beliefs and knowledge with students enables teachers to assess students' knowledge and abilities and to support students in either building on those understandings or unlearning beliefs or practices that stand in the way of new learning.

The power of prior knowledge, experience, and conceptions in learning is most often discussed in relationship to students. However, this learning principle applies to teachers as well: educators' beliefs, knowledge, and past experiences greatly shape how they teach and engage with students. This point is supported in a notable body of education research on "learning to teach." Though the majority of "learning to teach" research has focused on preservice teachers and less on other practicing educators, such studies still offer insight into the ongoing process of learning to teach. As Sharon Feiman-Nemser and Janine Remillard discuss in "Perspectives on Learning to Teach," "Like all learners, teachers can only learn by drawing on their own beliefs and prior experiences."[11] While many preexisting beliefs foster teacher development, others may pose barriers to engaging with pedagogical approaches that empirical research suggests to be more effective but that are less familiar to the teacher.[12] Educators who are interested in further developing their teaching practices can greatly benefit from investigating their beliefs about teaching and learning and how those influence their pedagogical work.

Research on conceptual change among future teachers also provides insight into how both new and experienced educators can uncover beliefs, assumptions, and sometimes misconceptions in order to enrich their teaching. As Feiman-Nemser and Remillard discuss in their analysis of research on the relationship between teacher beliefs and practices, "While current beliefs and conceptions can serve as barriers to change, they also provide frameworks for interpreting and assessing new and potentially conflicting information."[13] Synthesizing studies on teacher education that encourages future teachers to critically examine and reflect on their pedagogical

beliefs, Feiman-Nemser and Remillard conclude that several conditions appear to be central to enabling conceptual change. These can be paraphrased as:

1. time to reflect on why new practices and their related values and beliefs are more valuable than traditional approaches;
2. practical examples of these practices;
3. firsthand experience as learners with the given practices; and
4. ongoing support and guidance.[14]

I return to these four principles later, when describing the professional development that I offer on the *Framework*. First, however, I discuss how these practices can be further enriched by Brookfield's approach to "hunting assumptions" and by Strike and Posner's revisionist model of conceptual change. Both of these approaches acknowledge that beliefs and conceptual understandings exist in relationship to larger belief systems—which are dynamic and rooted in developmental histories—and to sociocultural and structural contexts.[15]

"HUNTING ASSUMPTIONS" AND CONCEPTUAL CHANGE

One approach to uncovering beliefs is what educator Stephen Brookfield describes as "hunting assumptions."[16] Brookfield discusses how our own beliefs and assumptions often are not immediately apparent to us (particularly when they are connected to long-held beliefs that tend to go unquestioned by oneself, a larger community, or by society more broadly). Acknowledging the powerful role that uncovered beliefs play in everyday life, Brookfield argues that investigating them is central to critical thinking, learning, and teaching: "Assumptions are guides to truth embedded in our mental outlooks. They are the daily rules that frame how we make decisions and take actions. Everyday communications are subject to a continuous and ever-present set of assumptions."[17]

Identifying assumptions and their influence on our thoughts and actions is especially vital to Brookfield's understanding of "critical practice," which he defines as "a way of identifying assumptions and reflecting critically on them in order to inform teaching practice."[18] Because assumptions often reside under the surface, the process of "hunting assumptions" is challenging, particularly in the case of "paradigmatic assumptions" that "frame the way we look at the world" and that usually do not operate within our conscious awareness.[19] For example, in the United States the notion of meritocracy—that those who work hardest are consistently the ones to succeed most—is often assumed to be true. Such paradigmatic assumptions tend to reinforce the status quo rather than calling into question the justness of a social system of great social and economic inequities. These assumptions do not only operate on an individual level; they are also intertwined with cultural and structural conditions and are often rendered invisible.

Uncovering one's own assumptions independently is incredibly difficult. As Brookfield emphasizes, people usually need to encounter and engage with others in order to become more aware of their own assumptions and underlying beliefs. Thus, "[a]lthough critical reflection often begins alone, it is ultimately a collective endeavor. We need colleagues to help us know what our assumptions are and to help us change the structures of power so that democratic actions and values are rewarded, both within and outside our institutions."[20]

Brookfield suggests four "critically reflective lenses" through which to consider our perspectives and experiences: "(1) our autobiographies as learners and teachers, (2) our students' eyes, (3) our colleagues' experiences, and (4) theoretical literature."[21] These different lenses help individuals and groups to uncover and investigate their assumptions and to consider other perspectives. As I discuss shortly, community-centered professional development can be an opportunity to apply these different lenses to critical reflection on teaching and learning.

CONCEPTUAL ECOLOGIES AND CONCEPTUAL CHANGE

One theoretical lens through which to understand how beliefs function and change comes from research and theories on conceptual change. Strike and Posner were among the first to propose a theory of conceptual change. In their initial conceptual change model (1982), they conclude that while conceptions are resistant to change, there are four cognitive conditions under which conceptual change is likely to occur: (1) dissatisfaction with existing conceptions, (2) a new conception that is intelligible and (3) initially plausible, and (4) a concept that appears fruitful (i.e., it presents potential for new lines of inquiry).[22] While their initial model placed most weight on an individual's beliefs while giving limited attention to the social, cultural, historical, and environmental factors of beliefs and conceptual change, in their revised model (1992) Strike and Posner emphasize concepts and beliefs as existing within larger "conceptual ecologies" that are dynamic and everchanging.[23]

The idea of "conceptual ecologies," much like Brookfield's approach to "hunting assumptions," suggests that all teachers can benefit from considering pedagogical practices not only in terms of individual teaching experiences (what Brookfield calls the autobiographical lens), but also in relation to cultural, structural, and historical factors and practices. Personal teaching experiences and related beliefs do not exist in a vacuum; rather, they are interconnected with larger structural and social systems that have largely shaped education, including instruction librarianship. In the context of librarianship, this includes a history of skills-based instruction, the ubiquity of one-shot instruction and the perception that this is librarians' main pedagogical contribution, and a traditional professional service model in which librarians are frequently positioned as fulfilling instruction requests over collaborating with fellow educators as equal partners. Considering the roles that beliefs play in teaching can help library educators and librarians to better understand those ideas and the

contexts in which they operate, and to consider alternative perspectives when a belief unproductively restricts their teaching.

CONCEPTUAL CHANGE AND PROFESSIONAL DEVELOPMENT

Feiman-Nemser and Remillard's, Brookfield's, and Strike and Posner's work offer constructive means through which to explore how prior knowledge, beliefs, and experiences and teaching and institutional contexts influence librarians' pedagogical practices and approaches to the *Framework*. This scholarship has helped me to gain new perspectives on facilitating professional development on the *Framework*.

Feiman-Nemser and Remillard's recommendations for teacher reflection on pedagogical beliefs (listed above) are particularly relevant to this professional development. These principles inform a six-week online asynchronous course that I offer on the *Framework*. In this class I strive to encourage critical reflection on teaching and learning and on librarians' roles as educators, as participants together learn about the *Framework* and related pedagogical theories and research and develop instruction plans that are informed largely by this material. Throughout the course, participants are invited to reflect on, in Feiman-Nemser and Remillard's words, "why new practices and their related values and beliefs are more valuable than traditional approaches."[24] In instruction librarianship, traditional approaches might be characterized by the heavy use of lecture, an emphasis on mechanical skills that are often decontextualized, and determining class content solely based on a course instructor's request. Newer practices like those that the *Framework* encourages include:

- emphasizing the larger purpose and significance of information literacy within a specific context;
- drawing explicit connections between concrete tasks and concepts and using those links to guide instruction;
- in one-shot library sessions, negotiating with the course instructor in order to develop an effective approach that aligns with one's own pedagogical expertise and approach; and
- exploring ways to integrate information literacy more fully into curricula and programs (and beyond a single class session).

All participants, in my experience, have come to the course with interest in exploring and developing less traditional teaching approaches, even if their comfort levels with newer instruction practice like those described above vary.

As noted in this chapter's introduction, the theme of flexibility plays a significant role in participants' perceptions of and approaches to the *Framework*. This frequently becomes evident through class discussions and instruction planning. Such activities become openings for recognizing beliefs and attitudes about the *Framework* and about librarians' teaching roles that are not always readily apparent. In the first week

of this six-week course, reflection on pedagogical approaches and related values and beliefs is particularly important. The intention here is that individuals and the group engage with prior beliefs, understandings, and practices in order to be more self-reflective and intentional throughout the course. It is essential that individuals are free to share their views of the *Framework* with relative honesty, openness, and nonjudgment. The fact that the *Framework* is intended to be flexible can help to foster such conditions, as there is no single "correct" way to use the *Framework*.

The overall course structure shares much in common with Feiman-Nemser and Remillard's recommendations for teacher development. For example, the authors suggest reflection on "why new practices and their related values and beliefs are more valuable than traditional approaches" and advise professional developers to offer concrete examples of the practice, real-world application of those practices, and continuous support and guidance.[25] Reflection on participants' teaching in relationship to the *Framework* is especially central to course materials and discussions in the first, second, and last weeks of class, while weeks three through five are concentrated more explicitly on developing an instruction plan that draws on *Framework* concepts. Feiman-Nemser and Remillard's last three principles—providing practical examples of new teaching practices, firsthand experience as learners with the given practices, and ongoing support and guidance—are vital to the instruction planning process.

The effectiveness of Feiman-Nemser and Remillard's recommended practices is evident, I believe, from class discussions, participants' instruction plans, and participant feedback throughout the course. Because I did not obtain permission from participants to share their individual work, this description of participants' experiences is admittedly general. A more focused and robust analysis of this professional development would be more systematic in nature. The purpose of this chapter, however, is not a formal assessment of my course or curriculum but rather an exploration of useful professional development strategies for pedagogical reflection on the *Framework* that are supported by already existing educational research and theories.

EXPLORING EXISTING AND ALTERNATIVE BELIEFS ABOUT THE *FRAMEWORK*

In teaching this course, I and course participants have noticed a number of common beliefs about the *Framework* and its pedagogical implications that are rooted to an understanding of the document as a pedagogical prescription. I present these not as universal beliefs but rather as examples of perspectives that may arise in work with the *Framework* and that are often useful to explore and ultimately to challenge. At the same time that library professionals' views of the *Framework* are multifaceted and context dependent, my experiences suggest that conceptions of the *Framework* as an inflexible document are not uncommon. The frustration that many librarians experience with this flexibility may often be tied to other beliefs about or experiences with library instruction that misalign with the *Framework*'s open-endedness.

The common disconnect between the *Framework*'s flexibility and the constraints of library instruction—both perceived and real—is a reminder that individuals' views of the *Framework* are greatly influenced by their local, cultural, and professional contexts, which often receive limited examination. Brookfield's emphasis on "hunting assumptions" and Strike and Posner's revised model of conceptual ecologies can serve as reminders to consider the influence of environmental, sociocultural, and structural conditions on teaching and professional practice. Consideration of these influences is key to deeper reflection on both individual and collective pedagogical practices and recognition of the possibilities and constraints of teaching, both of which can powerfully inform one's pedagogical practice.

In contrast to the *Framework*'s intended flexibility, an experience or perception of the *Framework* as rigid can result in frustration and a sense of paralysis, while an understanding of it as flexible is more likely to increase confidence, enthusiasm, and creativity for instruction planning. Awareness that such beliefs often surface when library professionals engage with the *Framework* may better prepare library educators for recognizing and engaging with those views, while also providing alternative perspectives to be considered.

Common beliefs that many participants recognize and challenge include the following:

- Librarians can, and should, teach *all* of the ideas articulated in the *Framework* (often within a very limited time).
- The *Framework* necessitates a complete overhaul of an instruction program.
- *Framework* concepts and concrete skills are distinct from one another.
- Teaching about conceptual understandings is an infringement on teaching faculty's domain.
- If faculty teach information literacy, there is no space left for librarians in the classroom.

While many and perhaps most librarians will disagree with the statements above, most of us are also likely affected to some degree by some of these beliefs. Reflecting on such beliefs and the conditions that may contribute to them is essential for library professionals who see value in the *Framework*, its implications for their direct instruction, and the possibilities it suggests for growing and deepening teaching partnerships with other educators. Similarly, frustrations with the *Framework* that are tied to such beliefs can be openings for critical reflection and professional community building among fellow educators. In supportive learning communities, participants together can more effectively investigate their beliefs about and conceptions of teaching and learning through different "lenses" and can consider how those perspectives relate to the *Framework*.

Participants in this online course often identify and challenge the above beliefs, even though I have not explicitly prompted them to "hunt for assumptions." Perspectives like those listed above, which often surface during discussions about views

of and approaches to the *Framework*, are frequently challenged—whether directly or indirectly—as individuals and groups reflect on and develop their teaching practices.

Below are the previously mentioned common misperceptions, followed by alternative perspectives that often surface or develop during the course.

Common belief: Librarians can, and should, teach all of the ideas articulated in the *Framework* (often within a very limited time).

Alternative view: Rather than librarians being burdened to teach all of the ideas articulated in the *Framework* (often within a very limited time), they can draw from those *Framework* elements that are most relevant to a given teaching context.

Common belief: The *Framework* necessitates a complete overhaul of an instruction program.

Alternative view: The *Framework*'s flexibility also means that libraries do not necessarily need to redesign their entire instruction program. While some library instruction units may decide that radically rethinking their programs is worthwhile, others may determine that they are overall satisfied with their current programs, while nonetheless being able to use *Framework* concepts and related pedagogical approaches to modify certain aspects of their curriculum, outreach, or other instructional work. Many librarians find that they have long taught about *Framework* concepts, but that this document provides a new vocabulary and resource for sparking conversations within and beyond their libraries about supporting teaching and learning.

Common belief: Framework concepts and concrete skills are distinct from one another.

Alternative view: Framework concepts and concrete skills complement one another and ideally are integrated into instruction. Concepts help to convey the larger purpose and significance of research, inquiry, and information use, while concrete skills and actions involve purposeful application of concepts in a particular context. For example, the practice of citation chaining (an observable skill) has much greater meaning when one recognizes it as a reflection of the dialogic and intertextual nature of scholarly communication (Scholarship as Conversation).

Common beliefs:

- Teaching about conceptual understandings is an infringement on teaching faculty's domain.
- If faculty teach information literacy, there is no space left for librarians in the classroom.

Alternative view: Given the complex, dynamic, and contextual nature of information literacy, it cannot be comprehensively taught or developed in a confined period of time. Instead, information literacy is a shared responsibility of all educators and

all learners that needs to be integrated into and across curricula and other learning experiences. Information literacy education can be most impactful when educators work in collaboration, sharing and benefiting from one another's unique expertise and perspectives. Again, these common beliefs and alternative views surface at various points in class discussions and instruction planning.

It is worth noting that in my online course I do not explicitly outline the common beliefs described above, though I challenge views of the *Framework* as inflexible through course materials and interactions and encourage alternative views that affirm constructive approaches to the *Framework* as a flexible document. If participants are not first given the opportunity to share and to explore their own beliefs about the *Framework* and how it relates to their unique contexts, an explicit challenge to specific beliefs about the *Framework*'s inflexibility may be ineffective and may be met with resistance. Though in some circumstances it may be beneficial for library professionals to directly engage with an already developed list of common beliefs or assumptions about the *Framework*, research on learning, misconceptions, and conceptual change generally suggests otherwise.[26]

As Strike and Posner discuss, misconceptions are highly resistant to change, since they are part of a larger conceptual ecology. However, as Brookfield suggests, when teachers have opportunities to consider their beliefs and teaching practices with a community of practice that encourages viewing ideas through different lenses, the potential for identifying assumptions and deepening reflective practice grows. For example, if librarians new to teaching are told that they should simply see themselves as equal teaching partners with disciplinary faculty when their library does not encourage this approach, they will likely have understandable reasons for not viewing themselves as equal partners. Librarians are far more likely to develop a greater appreciation of their own expertise and what they can bring to a more equal teaching partnership through dialogue with fellow librarians and sharing resources, experiences, and perspectives.

CONCLUDING THOUGHTS

At this point in teaching this online course, I have found that conceptual change theory, Brookfield's approach to "hunting assumptions," and research on teacher development and teacher beliefs shed new light on teaching this course. However, I have not at this date explicitly incorporated materials on "hunting assumptions," conceptual ecologies and conceptual change, or on shifts in teachers' pedagogical beliefs or practices. As noted previously, I plan in future course offerings to introduce Brookfield's four critically reflective lenses early in the course, after participants have initially reflected on their own experiences with and perspectives on the *Framework*. Strike and Posner's revisionist model of conceptual change, in combination with research on teachers' evolving pedagogical beliefs and practices, will continue to

inform my course planning and instruction, though they will likely not be explicitly integrated into the course, given its scope and focus.

As I continue to develop my approaches to professional development on the *Framework*, I strive to appreciate my own role as both a teacher and a learner. In reflecting on my own practice, I recognize that my teaching is shaped by my own experiences, perspectives, and inclinations, which in some ways strengthen and in other ways limit my practice. My teaching will continue to be enriched by my ongoing engagement with research and literature like that which I have shared here, as well as by interactions and conversations with students, fellow library professionals, and other library educators. As educator John Dewey demonstrated, critical reflection and critical practice, which involve continually considering alternative viewpoints and approaches to teaching and learning, are often most powerful when they happen in community.[27]

NOTES

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17. Brookfield, *Teaching for Critical Thinking*, 7.
18. Ibid., 11.
19. Ibid., 4.
20. Brookfield, *Becoming a Critically Reflective Teacher*, 36.
21. Ibid., 29.
22. George J. Posner, Kenneth A. Strike, Peter W. Hewson, and William A. Gertzog, "Accommodation of a Scientific Conception: Toward a Theory of Conceptual Change," *Science Education* 66, no. 2 (1982): 211–27.
23. Strike and Posner, "A Revisionist Theory of Conceptual Change," 163.
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26. National Research Council et al., *How People Learn*, 15–16; Joan Middendorf, Leah Shopkow, and Dan Bernstein, "Motivation and Accountability," in *Overcoming Student Learning Bottlenecks: Decode the Critical Thinking of Your Discipline* (Sterling, VA: Stylus, 2017), 105–36.
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14

Chandler-Gilbert Community College Case Study

Mary Beth Burgoyne and Kim Chuppa-Cornell

As we tracked the creation and adoption of the 2016 *Framework for Information Literacy for Higher Education* and the decision to sunset the 2000 *Information Literacy Competency Standards for Higher Education*, library faculty at Chandler-Gilbert Community College (CGCC) quickly realized the need for a faculty development program to help us embrace this transition.[1]

Beginning in fall 2015, we implemented a faculty development assessment each semester to help us meet this goal. Originally our first self-assessment tool asked library faculty to identify which *Standards* their lesson plans addressed. However, to shift toward incorporating the *Framework* into our lesson plans and assessments, we revised the focus of our biannual faculty development workshops to introduce the language of the frames and to begin addressing the knowledge practices.

This chapter tells the story of CGCC's ongoing professional development program for residential and adjunct library faculty and the continual evolution of our self-assessment tool from spring 2016 through fall 2018. Our early adoption of the frames led to many important developments for our information literacy (IL) program. Not only did the frames shape our critical research instruction program, but they coincided with a larger, institutional-level assessment of general education outcomes, providing opportunities for new leadership roles campus wide.

THE STORY OF PAPER

Our eagerness to embrace the *Framework* right from the start grew out of multiple transitions we were already experiencing prior to fall 2015. As one of the ten community colleges that make up the Maricopa County Community College District (MCCCD) in the metropolitan Phoenix area, CGCC has two campus locations and

two libraries, each providing IL instruction. The successive retirements of three of the five residential library faculty beginning in 2011 brought not only swift changes in personnel but new insight into areas for growth and revision. Although our IL instruction program has utilized a contextualized, assignment-based approach from the beginning, much of our teaching followed a standardized format, especially when working with composition classes. Large wall units held stacks of premade worksheets run off each semester in anticipation of the upcoming composition classes. We recorded instruction requests and basic assignment information in a small spiral planner as well as archived past teaching handouts in numerous, thick binders organized by class name, which filled the shelves behind the information desk to capacity.

THE STORY OF BECOMING FACULTY

At the same time as new residential faculty came on board with different skill sets and interests, our IL instruction program experienced tremendous growth. We developed more diverse instructional models that came to include a large increase in the number of in-person instruction classes taught across multiple disciplines. Acquiring a second library classroom, teaching IL instruction at our off-campus dual enrollment partner high schools, offering a small number of for-credit information studies (IFS) courses mostly in learning communities, and embedding library faculty in a number of online and hybrid courses all contributed to the growth. We knew that in order to sustain this level of diversity and demand successfully, we needed to provide more support for all of our library faculty, residential and adjunct, in order to create a strong and cohesive instructional program with shared visions and approaches.

Not all of the changes listed above existed by fall 2012, but enough transitions had occurred to warrant a new means for building community across all of our library faculty as well as more continuity across instructional models. Although a number of new faces now characterized our residential faculty, the core of our adjunct faculty remained fairly consistent during this time. We needed a way to bring everyone together, across our different schedules and college locations, and the all-faculty night offered the easiest solution. CGCC administration hosts an all-faculty night at the start of every semester; divisions and departments use the evening for important faculty development workshops and information sharing. The event is held at night to accommodate the schedules of adjunct faculty, who often have other jobs during the day. In the past, residential library faculty had attended the composition department's workshop only for a brief introduction and reminder about our instruction program, sometimes staying for the entire workshop if invited. However, we had never used the evening for our own library faculty development until fall 2012. This new expectation marked an important culture shift; we wanted to emphasize our role as faculty, and thus, like our colleagues, began utilizing the designated time not only to discuss updates in policies/procedures but also to explore best practices in IL instruction. For many of our faculty who referred to themselves as librarians and had

relied exclusively on the premade paper materials for library instruction, this new emphasis on teaching, learning, and assessment presented both challenges and opportunities. We worked to adopt new language stressing the title *library faculty* and choosing the term *critical research instruction* to define our philosophical approach more explicitly.[2] In addition, we asked for more accountability from each faculty, requesting they upload not only the research assignment for each class they taught but also their lesson plans and any related teaching materials to a digital calendar, which replaced the paper planner and spiral binders and now serves as our repository for all past and present IL classes taught in our instruction program.

THE STORY OF ASSESSMENT: THE EARLY DAYS

Perhaps not surprisingly, not everyone embraced the cultural changes immediately. Our early faculty development workshops experienced many challenges: We often had spotty attendance, and those who came often had not read the provided article or brought materials to share, as requested ahead of time in our communications. Although the role of teaching in academic librarianship has been growing in importance, many master's programs do not yet provide adequate preparations in instruction and assessment.[3] Thus, the focus of our initial workshops addressed many foundations of instructional design, such as effective openings and closings, informal assessment, active learning strategies, brain research and affective learning, and classroom management tools. As our faculty development program took hold, we continued to question the best way to develop our program-level assessment. We conducted two student satisfaction surveys in spring 2012 and spring 2013, which provided minimal guidance for future instructional directions. We then designed a common pre-post test for our embedded instructional role in spring 2014, followed by a survey of faculty who brought their classes to the library for critical research instruction in spring 2015. While each of these produced more useful insights than the surveys, we still had not designed a way to capture what was happening in our classrooms to determine if our professional development efforts were paying off.

Fortunately, two major outside influences occurred that provided new directions: CGCC's accreditation visit for the Higher Learning Commission (HLC) and the Association of College and Research Libraries' (ACRL) adoption of the *Framework for Information Literacy for Higher Education*. These simultaneous events created a type of kairos for us, opening an opportunity for action.[4] The campus's preparations for gathering accreditation data offered a wonderful justification for the development of a new assessment strategy focused more specifically on teaching and learning. With roughly four hundred in-person critical research instruction classes per academic year, we needed more insight on what was working (and not working) from our library faculty's perspective. Beginning in fall 2015, we implemented what has become a series of anonymous self-reflective teaching assessments, each version modified based on the findings of the previous semester.[5]

At first, we asked faculty to complete one reflection each week using a fairly simple Google form. The template asked library faculty to supply basic information about their lesson plan, including the class, the location, and the active learning strategy used, as well as to include a brief explanation of how their chosen classroom assessment technique addressed one or more of the *Standards*. Although we included open-ended, reflective prompts regarding insights and future applications, these responses tended to be brief and general. By the end of the fall, the number of assessments submitted electronically indicated that not every library faculty completed one each week (a goal that may have been overly ambitious for the first implementation).

For spring 2016, the digital tool remained much the same except for two key additions. First, we asked faculty to identify which frame(s) and knowledge practice(s) they were addressing in their lesson instead of the *Standards*.[6] To introduce everyone to the frames and their definitions, we incorporated a jigsaw activity into our spring 2016 library faculty workshop using the graphic materials created by Bucknell University.[7] In addition to the weekly reflections, we added a "Part II" assessment to be completed three times over the course of the semester. Part II asked faculty to collect and assess student artifacts produced by a classroom assessment technique used during the lesson. These two additions represented our efforts to move forward not only in adopting common guiding principles for our instruction program but to incorporate more evidence of student learning into our practice, as recommended in the literature discussed above.

Past experience had already shown us the limitations of student satisfaction–style surveys before we encountered the large body of emerging scholarship calling for more authentic assessment of student work in IL instruction.[8] However, as the literature also admits, this goal is easier to set than to accomplish, requiring the participation and investment of many colleagues both inside and outside of the library.[9] Large-scale authentic student assessments require much planning and preparation, often spanning long time frames, in order to design and norm rubrics,[10] gather additional data,[11] and identify and collect student artifacts such as research products[12] or student reflective responses.[13] We did not want to make the Part II requirement too onerous or intimidating, so we kept the submissions anonymous and asked faculty to write reflective narratives describing what students learned, explaining whether they thought students achieved the intended outcome, and identifying what they would change next time based on their insights.

While the number of submissions rose from 51 in fall 2015 to 63 in spring 2016, the reflective responses still remained fairly general and brief overall. The self-reflective tool was helping us adopt a culture of assessment and improvement while providing a model for instructional design; however, we needed more practice as a department to continue to evolve. We found inspiration and guidance in the concept of "deliberate practice"[14] and its emphasis on specific strategies for developing expertise; thus, deliberate practice became the focus of our fall 2016 library faculty workshop and self-assessment program. Echoing the emphasis on process,

thresholds, and recursive learning found in the *Framework*, educational leaders were adopting the language of deliberate practice to call for more self-driven improvement plans in teacher evaluation programs.[15] Happily, these same calls could be found in the field of information literacy as well. Sheila Corrall and Michelle Reale both argue a strong case for the role of reflection in IL instruction and pedagogy:[16] As Corrall states, "Critical reflection needs to be elevated to the special status of a *threshold competence* for library and information professionals generally and for IL practitioners in particular."[17] Our fall 2016 reflective tool still asked library faculty to name the active learning technique used and the frame/knowledge practice addressed by their lesson; in addition, it required the submission of a specific learning outcome and included more explicit deliberate practice prompts at the end.

THE STORY OF ACCREDITATION

While we were implementing program-level assessments, the college was preparing for its impending HLC accreditation. A postsecondary institution scheduled for a visit from its accreditation organization could be likened to a family expecting guests, spending hours or days menu planning and housecleaning to create a welcoming place. For the institution expecting an accreditation team visit, preparation requires years, not hours or days. Just as one's guests may send a thank-you note after the visit commending the hospitality, the postsecondary institution gets the Peer Review Team's report. That report addresses the institution's demonstrated evidence of meeting accreditation criteria and "areas of concern." The areas of concern statement is where our story continues.

CGCC is accredited by the HLC through a ten-year cycle using the Open Pathway: Assurance Review.[18] HLC-accredited institutions must demonstrate standards of quality through five accreditation criteria: (1) Mission; (2) Integrity: Ethical and Responsible Conduct; (3) Teaching and Learning: Quality, Resources, and Support; (4) Teaching and Learning: Evaluation and Improvement; and (5) Resources, Planning, and Institutional Effectiveness. CGCC began preparing in 2013 for the reaccreditation assurance argument and Peer Review Team visit scheduled for October 31 through November 2, 2016.

Like many postsecondary institutions, CGCC has institutional student learning (general education) outcomes as well as course-level outcomes. However, the legacy general education outcomes were created in the early 2000s and had fallen into disuse. CGCC is a data-rich institution; nevertheless, all assessment work was siloed, and there were gaps in a number of institutional assessment practices. As a result, CGCC received a reaffirmation of accreditation along with a "Meets with Concerns—Follow-Up Monitoring" statement for criterion 4, Teaching and Learning: Evaluation and Improvement, assessment at course, program, and institutional level. The monitoring statement provided the urgency for the college to scale up efforts

for sustained assessment of student learning outcomes at all levels (course, program, and institutional general education).

CGCC devised a multipronged approach, beginning with revising the college's legacy general education outcomes in critical thinking, literacy, personal development, and communication, followed by faculty development on the revised general education outcomes, rubric design, and assessment data analysis; strategic planning; and institutional-tiered electronic data collection tools and processes. As the literature emphasizes, "[I]nstitutional assessment should be an ongoing activity and include multiple measures of student learning. It works best when linked to strategic planning and program review and structured so results can serve the twin purposes of internal educational improvement and external accountability."[19]

The first step in spring 2017 was to create four teams of volunteer faculty charged with revising each of the four original general education outcomes. The faculty teams represented disciplines related to the outcomes as well as faculty with extensive rubric experience. Given the level of institutional assessment urgency, each faculty team had three months to revise the old outcomes, including indicators and rubric, using a template of four performance levels: exemplary, competent, developing, and minimally/not evident. The revised outcome and its rubric would be deployed as a pilot at the start of the fall 2017 semester. Since library faculty had already been working with the *Framework*, we recognized this as an extraordinary opportunity to infuse the new national information literacy frames into our college's institutional-level assessment work. We quickly volunteered, and administration appointed us as leads to revise the college's literacy outcome. We were joined by a composition faculty member with threshold experience in rhetoric and composition. For phase 1, we analyzed threshold concept theory, the *Framework* language, four years' data on critical research instruction classes taught by library faculty, and CGCC students' research assignment and project needs. We also reviewed the Association of American College and Universities' Information Literacy VALUE Rubric;[20] however, we did not use it because it is based on the legacy *Standards* and not the *Framework*.

Our intentional data analysis work in phase 1 was followed by phase 2's intensive comparisons of *Framework* thresholds, knowledge practices, and dispositions to select those that best fit our instructional experiences at CGCC. The task was daunting, given that there are six thresholds and ninety-three knowledge practices and dispositions statements in the *Framework*. We analyzed course-level needs, reviewed CGCC's Mission Statement,[21] and used the guiding principles listed below to write a new information literacy outcome statement and assessment rubric indicators:

a. Demonstrate pedagogy of active learning, community and global engagement, service learning, student research, and scholarly conversation.
b. Serve the mission of being a student-centered college that creates learning experiences and growth opportunities designed for our diverse communities for general education transfer credit, workforce development, and lifelong learning.

c. Apply to multiple course modalities of face-to-face, online, hybrid, and dual enrollment.
d. Support instructional design and student assignment and project needs data from phase 1.

During phase 2, we also conducted periodic literature and institutional website searches for journal articles, books, or documents we could reference as guides in the process of adapting the *Framework* document into the community college's institutional information literacy student learning outcomes. While literature exists on the legacy IL *Standards* as course or assignment-based student learning outcomes (SLOs) and on the value of institutional SLOs, it was difficult to locate from "concept to implementation" articles or guides for institutional-level work. We found various models helpful. For example, St. Louis University's Assessment of Student Learning HLC update delineated steps for crafting institutional SLOs;[22] other sources provided guidance on committee structure, whom to involve, and drafting and piloting the institutional SLOs.[23] Lori Baker and Pam Gladis provided insight on institutional culture, kairos, and its importance in creating institutional information literacy outcomes and "collective agency" collaboration for integrating IL and assessing IL as course, program, and institutional SLOs. J Fredericks Volkwein's research validated our approach of examining the institution's mission, goals, objectives, and values in deciding what the institutional SLOs should be.[24] All three addressed ways to encourage faculty participation in an institutional assessment program.

A criticism of the *Framework* is that it is too theoretical and not practical for information literacy practitioners.[25] Recognizing that these concerns would exist at our institution, phase 3's goals were to create an information literacy rubric with its criteria and indicators based on *Framework* elements, but written to be accessible by CGCC's broad audience of faculty and staff. We selected criteria and indicators, debating and comparing them against CGCC's current and evolving student learning outcomes needs. The final indicators melded the best fit knowledge practices and dispositions phrases into statements that could be recognized by diverse rubric users and applied to the myriad evidence of learning created by CGCC students. The new information literacy rubric honors CGCC's curriculum of existing assignments and projects, while reflecting higher order thinking skills[26] and laying the groundwork for more rigorous expectations for student learning. The legacy literacy outcome statement and indicators that reflected the *Standards* was superseded by the more robust, *Framework*-centric statement and indicators (textbox 14.1 and textbox 14.2).

College leadership accepted the proposed information literacy outcome statement and assessment rubric in July 2017. With the new outcome and rubric in place, our fall 2017 work focused on piloting the information literacy outcome and rubric in our credit-bearing IFS courses and critical research instruction program as well as on designing and facilitating faculty development workshops across the college.

Textbox 14.1. Chandler-Gilbert Community College General Education Literacy Outcome, 2000–2017

Literacy Outcome, 2000–2017[a]

Definition: Literacy is the ability to critically access, comprehend, interact with, and use printed, electronic, oral, and artistic materials

Plan and conduct a search for information

- Recognizing a need for information
- Finding a variety of source material
- Evaluating sources for accuracy, credibility, reliability, and appropriateness
- Using information appropriately to assess prior knowledge, values, and experiences

Analyze and evaluate materials

- Context, audience, and purpose
- Logic, assumptions, inferences, fallacies, and biases
- Relationship of form and artistic devices to content

Use the information to test assumptions, decide a need for further research, confirm, or alter one's perception, solve a problem, or make a decision.

Source: Chandler-Gilbert Community College General Education Literacy Outcome (2017).

[a] The original literacy outcome definition and indicators written by CGCC faculty in 2000. This definition and indicators no longer are published for use.

Textbox 14.2. Chandler-Gilbert Community College Information Literacy Outcome, 2017–Present

Information Literacy Outcome, 2017–Present[a]

Definition: Information literacy is the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning.

Inquiry Process

- Assess the fit between an information's creation process and a particular information need.
- Recognize that information may be perceived differently based on the format on which it is packaged.
- Formulate questions for research based on gaps or on reexamination of conflicting information.
- Organize information in meaningful ways.
- Determine the initial scope of the task required to meet their information needs.
- Match information needs and search strategies to appropriate search tools

Contextual Authority

- Monitor gathered information and assess for gaps or weaknesses or multiple perspectives.

Analyze materials for audience, context, and purpose.
Determine the credibility of sources based on author, content, format, assignment need, etc.

Creation Process

Contribute to scholarly conversation at an appropriate level.
Synthesize ideas gathered from multiple sources.
Draw reasonable conclusions founded on the analysis of information.
Develop an understanding that their own choices impact the purpose for which the information product will be used and the message it conveys.

Ethical Use

Give credit to ideas of others through proper citation and attribution.

Source: Chandler-Gilbert Community College Information Literacy Outcome (2017).
[a] The revised information literacy general education outcome definition and indicators adapted by CGCC library faculty from the ACRL *Framework for Information Literacy for Higher Education.* The revised outcome and indicators work was driven by CGCC's 2016 HLC reaccreditation report that required an interim report on CGCC's institutional assessment practices, especially as they related to the college's general education outcomes and assessing student learning.

THE STORY OF ASSESSMENT: INSTITUTIONAL ROLLOUT

As expected, the institution's cultural shift on assessment prompted some faculty anxiety.[27] There were multiple changes and expectations at once: All four general education institutional outcomes and rubrics had been revised, and all residential faculty were required to pilot at least one of the new outcomes in one of their classes by assessing an assignment using the new rubrics beginning in fall 2017.

We knew the new information literacy outcome and rubric would be particularly challenging because it was so different from the legacy version. We actively sought opportunities to engage faculty with the new information literacy outcome and rubric indicators, starting with our library faculty and our more receptive faculty partners, then scaling to college-wide workshops. For fall 2017, we focused on our work with composition, geology, and exercise science faculty because they account for more than half of our critical research instruction classes. We collaborated with the discipline faculty to design source-based assignments and to modify the IL rubric, selecting the best fit indicators for each assignment. We then applied the rubrics to assess the students' submissions and analyzed findings to make changes in the following semester's assignments. The assessments findings led to changes in assignment design, instructions, timing of instruction, and revision of the rubric's performance scales.

In spring 2018 we designed and facilitated multiple all-faculty workshops through the Day of Learning and Center for Teaching and Learning (CTL) venues. Summer 2018 found us at the CGCC's annual Learning Communities and Integrative Assignments three-day summer institute conducting an afternoon session on designing

integrative assignments for institutional-level student learning outcomes assessment. For each workshop, we provided background on the national changes toward thresholds for information literacy and our decision-making process for winnowing the dense *Framework* down to fourteen custom-written indicators most applicable to CGCC's pedagogy.

Concurrent to our IL fall 2017 to fall 2018 work with other discipline faculty, we also designed and facilitated library faculty development workshops each semester. Our workshop structure included an article read in common as well as discussions on the *Framework*, reflective practice, or learning outcomes. Following discussion, participants worked in pairs or groups to create potential lesson plans with learning outcomes and relevant indicators identified on the new IL rubric. Our goal was that library faculty would then apply these instructional design principles as part of their critical research instruction and reflect on the findings, documenting their experiences and insights demonstrating growth throughout the semester.

Through these faculty development experiences, we have found that one of the constant challenges is the perception that one must use *all* the indicators in a rubric. We were diligent guiding faculty (library and other discipline faculty) in matching the most relevant IL rubric indicators with their targeted assignment. We brainstormed what evidence in the students' submitted work demonstrates a mastery level (exemplary, competent, developing, and minimally/not evident). Our faculty development has focused on helping our colleagues see the options of how to apply the *Framework* language to their assignments. For example, many faculty viewed "entering scholarly conversations" as applicable only to experts instead of seeing students' ability to enter a conversation "at the appropriate level."[28]

In addition to applying the new outcome and rubric to our critical research instruction program, we also incorporated them into our for-credit IFS courses. CGCC library faculty teach IFS110 (Critical Research for College Success) and IFS201 (Information in a Post-Truth World) courses each semester, with a third course, IFS210 (Research in a Global Society), taught in the spring. IFS110 is partnered with all online sections of ENG102 (First Year Composition) as online learning communities, and IFS210 is partnered with CRE101 (College Critical Reading and Critical Thinking) as a face-to-face learning community. We chose the capstone annotated bibliography required in all IFS courses as our common assignment and common assessment. The annotated bibliography with its source requirements and annotation structure demonstrates integrated IFS and partner ENG/CRE course outcomes, or, for the stand-alone IFS201, its outcomes. Our fall 2017 semester application of the IL rubric used eleven of the fourteen indicators, revealing that even though all IFS courses require an annotated bibliography, the source and annotation depth requirements varied. As a result, beginning with the spring 2018 semester, we collectively narrowed our IL rubric to the five best fit indicators that would apply regardless of source or annotation requirements. In addition to our own qualitative and quantitative IFS information literacy outcome data analysis, the college leadership set the performance scale goal of "competent"

at 70 percent or higher for all outcome indicators assessed and required quantitative data uploaded to the Strategic Planning Online (SPOL) tool. The 70 percent "competent" serves as an institutional starting place to drive departmental and program-level goals and growth.

THE STORY CONTINUES

In reviewing our work over the last two years, our experiences and insights have led us to some important realizations, such as the critical role of process in learning. Just like students, faculty need time to process new learning as well. We need to hear new information more than once and to work with new concepts over a period of time within a supportive environment. New teaching and assessment strategies must be introduced in a nonpunitive, nonthreatening manner, encouraging experimentation, trial, reflection, and revision.

We recommend starting this kind of information literacy assessment program by identifying which current partners will be most receptive to the new model. It is important to ground these conversations in the current literature and to base justification for change on national models in the field, such as the ACRL *Framework*. In addition, providing models of effective applications help faculty conceptualize the theory and promote their buy-in. Throughout our process, we have consistently mined our library faculty's self-reflective submissions for examples to share with the group. We have also shared discipline-specific models for college-wide faculty development experiences, both through workshops and through the college's digital repository of the general education outcome resources.

Our experiences have taught us that this story does not end but continues. We need to stay current with developments in information literacy instruction and assessment in postsecondary education to guide our decisions and directions. Our commitment to deliberate practice and reflection will continue to evolve to include deeper, authentic assessment across all of our instructional models. Looking ahead, we know institutional needs will also require us to revisit the information literacy outcome and rubric in 2020 for possible revisions.

Through this whole experience, the ACRL *Framework* has been our touchstone, providing inspiration and foundation. It has provided a sense of validation for the work we do: "In the same way that the ACRL *Framework* requires an identify shift, librarians must be willing to make their own changes and alter their ideas. Although traditions should not be abandoned, the openness of the ACRL *Framework* allows for agency for librarians. It creates a conversation that positions librarians as creators and is forward thinking."[29]

NOTES

1. Association of College and Research Libraries, *Framework for Information Literacy for Higher Education*, http://www.ala.org/acrl/standards/ilframework; Association of College and Research Libraries, *Information Literacy Competency Standards for Higher Education*, https://alair.ala.org/handle/11213/7668.

2. Our term differs from the commonly used term *critical information literacy*, which addresses the complex and political nature of information. Our chair suggested the term *critical research instruction* at an end-of-the-year library instruction retreat in spring 2014 because it offered a nice parallel to a college-level reading course called College Critical Reading and Critical Thinking. For more on the concept critical information literacy, see Eamon Tewell, "A Decade of Critical Information Literacy: A Review of the Literature," *Communications in Information Literacy* 9, no. 1 (2015): 24–43.

3. See Heidi Julien, Melissa Gross, and Don Lathan, "Survey of Information Literacy Instructional Practices in U.S. Academic Libraries," *College & Research Libraries* 79, no. 2 (2018): 179–99.

4. Lori Baker and Pam Gladis, "Moving Ahead by Looking Back: Crafting a Framework for Sustainable, Institutional Literacy," in *Information Literacy: Research and Collaboration Across Disciplines*, ed. Barbara J. D'Angelo, Sandra Jamieson, Barry Maid, and Janice R. Walker (Fort Collins: WAC Clearinghouse and University Press of Colorado, 2016), 329–30. For additional discussion of taking advantage of times of institutional changes, see Heather Hulett et al.,"Information Literacy at University: A Toolkit for Readiness and Measuring Impact," *Australian Academic & Research Libraries* 44, no. 3 (2013): 151–62; Glenn Johnson-Grau et al., "Patience, Persistence, and Process: Embedding a Campus-wide Information Literacy Program across the Curriculum," *Journal of Academic Librarianship* 42 (2016): 750–56.

5. For more discussion on our reflective assessment tool and prompts, see Mary Beth Burgoyne and Kim Chuppa-Cornell, "If I Tried This Idea Again: Developing Faculty Professional Growth through Reflective Practice," *Reflective Practice* 19, no. 6 (2018): 818–31.

6. ACRL, *Framework*; ACRL, *Standards.*

7. Bucknell University, "About the Framework," https://researchbysubject.bucknell.edu/framework.

8. Kara Malenfant and Karen Brown, "Creating Sustainable Assessment through Collaboration: A National Program Reveals Effective Practices," *National Institute for Learning Outcomes Assessment* 31 (2017): 11; Wendy Holliday et al.,"An Information Literacy Snapshot: Authentic Assessment across the Curriculum," *College & Research Libraries* 76, no. 2 (2015): 172–73; Holly Luetkenhaus et al., "Measuring Library Impacts through First Year Course Assessment, *Communications in Information Literacy* 11, no. 2 (2017): 340–43.

9. Kacy Lundstrom, Britt A. Fagerheim, and Elizabeth M. Benson, "Librarians and Instructors Developing Student Learning Outcomes: Using Frameworks to Lead the Process," *Reference Services Review* 42, no. 3 (2014): 492–93; see also Trenia Napier et al., "A Collaborative, Trilateral Approach to Bridging the Information Literacy Gap in Student Writing," *College & Research Libraries* 79, no. 1 (2018): 129–30.

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15

Exploring Metaliterate Learning through the Frames of Information Literacy

Thomas P. Mackey

This chapter examines metaliteracy and the Association of College and Research Libraries (ACRL) *Framework for Information Literacy for Higher Education*[1] as complementary models that support learners in theory and praxis. Several projects developed by the Metaliteracy Learning Collaborative, a team of educators at SUNY Empire State College and the University at Albany, embody metaliteracy as a pedagogical framework[2] and advance information literacy as envisioned in the ACRL *Framework*. One example, the final project developed for a massive open online course (MOOC), Empowering Yourself in a Post-Truth World,[3] illustrates the relationship between both frameworks. This learning activity was designed to promote metaliterate learning and is reinforced through the six frames of information literacy. The role of metacognitive reflection in this context is especially vital and is a pivotal learning objective to converge both frameworks.

Although varied in approach, the traditional route for information literacy instruction is through academic libraries and by means of collaboration with faculty in undergraduate and graduate education. Preservice librarians are prepared in library and information science (LIS) programs that engage with the latest approaches to information literacy. These efforts have been influenced by metaliteracy as a reframing[4] and reinvention[5] of information literacy and by the ACRL *Framework* to officially redefine information literacy. Preparing librarians and LIS faculty to teach information literacy takes place in the academy, through formal academic programs and departments.

Increasingly, MOOCs and open educational resources (OERs) are opening new pathways for instruction and professional development that expand academic opportunities for both teachers and learners. While these novel pedagogical approaches do not necessarily substitute for the required credentials achieved in traditional LIS programs, they do provide access to content, collaborative opportunities, and

learning communities not always found in established programs. It is essential for emerging scholars and practitioners to engage with innovative pedagogical theories and practices within a field they will eventually lead.

The emergence of metaliteracy and the ACRL *Framework* both shared a common goal to rethink the *Information Literacy Competency Standards for Higher Education*,[6] originally published in 2000, and to reconsider the American Library Association's (ALA) definition of information literacy. Both frameworks were inspired by revolutionary changes in the information environment and recognition within the field of library and information science and beyond that we needed pedagogical strategies to prepare learners for a connected world.

METALITERACY

Metaliteracy is an empowering approach to learning that advances metacognitive reflection and prepares learners to be ethical and responsible producers of information in participatory environments. The idea of learner as producer is core to metaliteracy and propels a wide range of active metaliterate learner roles within the same unified model.[7] Metaliterate learners are envisioned as communicators, translators, collaborators, teachers, and researchers who participate in and contribute to social spaces in mindful and deliberate ways. The metaliteracy framework was informed by the emergence of collaborative technologies such as social media and online communities.[8] Initially, information literacy itself was envisioned *as* a metaliteracy in which learners were active producers of information in participatory environments. According to this original definition of the idea, "Metaliteracy promotes critical thinking and collaboration in a digital age, providing a comprehensive framework to effectively participate in social media and online communities. It is a unified construct that supports the acquisition, production, and sharing of knowledge in collaborative online communities."[9]

This reframing of information literacy recognized the impact of social technologies on the learner and the need for the development of interactive and collaborative producers of knowledge rather than just consumers of information. Such a significant shift in emphasis meant that "standard definitions of information literacy are insufficient for the revolutionary social technologies currently prevalent online."[10] While metaliteracy challenged how information literacy was understood at the time, it evolved as a distinct model from the ACRL *Framework* and inspired several digital learning resources developed by the Metaliteracy Learning Collaborative.

Metaliteracy was influenced by theories within LIS, such as James Elmborg's assertion of "critical information literacy," which redefines the pedagogical scope of librarians and "involves developing a critical consciousness about information,"[11] and James Marcum's critique of information literacy as being too focused on skills in text-based formats.[12] Both perspectives emphasized the need for a comprehensive approach to learning beyond the development of fundamental information skills. As

the model evolved, theories outside the field also had an impact, such as George Siemens's connectivism, which is a "cycle of knowledge development (personal to network to organization)" that "allows learners to remain current in their field through the connections they have formed."[13] This focus on the individual situated in a global network reinforces the importance of collaborative learning and knowledge creation within social spaces. Postmodern theory,[14] the concept of "participatory culture,"[15] and global trends in OERs[16] all influenced the model as well.

FOUR DOMAINS OF METALITERATE LEARNING

As metaliteracy advanced as a pedagogical framework, the emphasis on metacognition, or reflecting on one's thinking, was strengthened as one of the four metaliteracy learning domains. The others include cognitive (thinking), behavioral (enacting), and affective (feeling).[17] As John H. Flavell has argued, metacognition provides "opportunities for thoughts and feelings about your own thinking to arise and, in many cases, call for the kind of quality control that metacognitive experiences can help supply."[18] According to Flavell, metacognition is both reflective and self-regulating as learners contemplate their own thinking and feelings to gain control over thoughts and actions. This approach reinforces the relationships among domains, as reflection leads to actions. It also supports a comprehensive approach to metaliteracy that includes four interrelated learning domains that are realized through specific learning strategies.

METALITERACY GOALS AND LEARNING OBJECTIVES

As metaliteracy developed with a stronger emphasis on metacognition within four learning domains, the model also incorporated specific goals and learning objectives to reinforce active metaliterate learner roles. The first iteration of the Metaliteracy Goals and Learning Objectives[19] expanded from the outcomes outlined in the original metaliteracy article[20] and are designed to be flexible and adaptable. The first significant revision of the goals and objectives were developed in response to the challenges of the post-truth world.[21] According to the *Oxford English Dictionary*, the term *post-truth* is "relating to or denoting circumstances in which objective facts are less influential in shaping public opinion than appeals to emotion and personal belief."[22] Post-truth situations play out in today's information environment when false and misleading information is created and shared by individuals based on fixed belief systems. The Metaliteracy Goals and Learning Objectives now include a stronger emphasis on evaluating bias and an enhanced focus on the ethics of producing and sharing information.[23]

According to Jacobson and colleagues,[24] the first goal of metaliterate learning is to "actively evaluate content while also evaluating one's own biases," which encourages individuals to identify confirmation bias while checking preconceptions in all sources. This goal is supported by several learning objectives, including the ability to "verify expertise but acknowledge that experts do exist," which encourages a critical evaluation of sources while advancing the idea that we do have both experts and nonexperts, and that expertise is valued. The second goal of metaliterate learning is to "engage with all intellectual property ethically and responsibly," which promotes accountability in the consumption and production of information. This goal is supported by several learning objectives, including the ability to "responsibly produce and share original information and ethically remix and repurpose openly licensed content," which advances a deeper understanding of content creation that requires informed and answerable actions with both original and repurposed formats.

The third goal of metaliterate learning is to "produce and share information in collaborative and participatory environments," which is central to the metaliteracy model because it recognizes the learner as a creator of information. This goal is supported by several objectives, including the ability to "see oneself as a producer as well as consumer of information," which allows for reflection and recognition of one's capacity to create meaningful information in addition to being able to consume information responsibly. The fourth goal of metaliterate learning is to "[d]evelop learning strategies to meet lifelong personal and professional goals," which encourages individuals to take charge of their learning throughout one's life span. This goal is supported by the objective to "assess learning to determine both the knowledge gained and the gaps in understanding," which advances reflective thinking and self-regulating one's own learning. All of these goals and objectives support one or more of the four learning domains and provide specific actions to enact metaliteracy theory in practice.

METALITERATE LEARNER CHARACTERISTICS

Metaliteracy was initially conceptualized in relation to a wide range of related literacies to identify common characteristics within a unified framework.[25] As the model matured, however, a distinct set of metaliteracy characteristics developed that are specific to metaliterate learning, including collaborative, participatory, reflective, civic-minded, adaptable, open, productive, and informed.[26] The characteristics of metaliterate learning are interrelated and support the development of active and contributing individuals who are capable of both self-directed and collaborative learning. Similar themes, such as expertise, community, learner as producer, and intellectual property, are embedded in the ACRL *Framework* as well, even if the overall format and approach are different.

THE ACRL *FRAMEWORK*

The ACRL *Framework* provides the official institutional redefinition of information literacy based on several emergent influences, including metaliteracy. As a reimagining of information literacy, the *Framework* presents an open and flexible approach to teaching and learning that is applied by educators in a variety of disciplines. As explained in the *Framework*, this reconceptualization of information literacy "is based on a cluster of interconnected core concepts, with flexible options for implementation, rather than on a set of standards or learning outcomes, or any prescriptive enumeration of skills."[27] Rather than declare definitive competencies with specific learning objectives, this recasting of information literacy presents a conceptual framework of ideas to be adapted in disparate teaching and learning settings. The definition of information literacy states, "Information literacy is the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning."[28]

The influence of metaliteracy is evident in this description, which emphasizes "reflective discovery of information,"[29] suggesting a metacognitive approach to information research and analysis. Most importantly, the revised definition of information literacy goes far beyond the individual consumption of information to recognize the importance of learners as producers, who actively and ethically participate in collaborative communities for "creating new knowledge."[30] This is a fundamental shift away from simply finding and locating information for a particular use, as emphasized in the original ACRL *Standards*, to actually constructing new knowledge in social learning communities, an idea that is fundamental to metaliterate learning.

The ACRL *Framework* incorporates elements of metaliteracy while emphasizing three central ideas:

1. threshold concepts,
2. knowledge practices, and
3. dispositions.[31]

According to Jan H. F. Meyer, Ray Land, and Caroline Baillie, threshold concepts are understood as an approach to learning that "builds on the notion that there are certain concepts, or certain learning experiences, which resemble passing through a portal, from which a new perspective opens up, allowing things formerly not perceived to come into view."[32] In many ways, the six frames of information literacy provide these conceptual portals for learners to better understand our complex relationship with information in multiple settings and situations. The *Framework* identifies the following frames:

- Authority Is Constructed and Contextual
- Information Creation as a Process

- Information Has Value
- Research as Inquiry
- Scholarship as Conversation
- Searching as Strategic Exploration[33]

Each of these frames or openings to new knowledge is supported by dispositions, "which describe ways in which to address the affective, attitudinal, or valuing dimension of learning."[34] This suggests an alignment with metaliteracy, which also emphasizes the affective learning domain within an integrated model that also includes the metacognitive, cognitive, and behavioral. These conceptual frames are also reinforced with knowledge practices, "which are demonstrations of ways in which learners can increase their understanding of these information literacy concepts."[35] Similarly, knowledge practices are relatable to the behavioral, cognitive, and metacognitive domains of metaliteracy, which together emphasize how reflective thinking impacts our thinking and how we apply core information principles and competencies.

The openness of the ACRL *Framework* allows for this interpretation of the model that connects to metaliteracy in both subtle and overt ways. This may be the point, since the *Framework* was constructed in a way that provides an open enough structure to reinforce key information concepts while also being adaptable to other theories and practices. The *Framework* explicitly incorporates metaliteracy with the focus on learners as producers of information, and with the emphasis on the cocreation of knowledge in learning communities.

The metacognitive dimension of metaliteracy, however, was diminished in the final draft of the *Framework*, even though there was interest in developing it further.[36] As Diane M. Fulkerson, Suzanne Andriette Ariew, and Trudi E. Jacobson argue, "without reflection learners will neither change to see themselves as empowered learners with authoritative voices, nor will they be conscious of their own attitudes."[37] This insight about the need for an expanded emphasis on metacognitive learning identifies a gap in the *Framework* while also presenting an opportunity to adapt and apply it in ways that draw upon metaliteracy. Metacognitive reflection supports learning through threshold concepts that offer "a transformed way of understanding, or interpreting, or viewing something, without which the learner cannot progress, and results in a reformulation of the learners' frame of meaning."[38] Thresholds further reinforce knowledge gained through metacognition, leading to new insights and actions as individuals take charge of their learning.

The next part of this chapter will examine a specific metaliterate learning activity through the six frames of information literacy, along with associated dispositions and knowledge practices. This frame-based exploration of metaliterate learning will illustrate the value of bringing together metaliteracy and information literacy in praxis. This convergence of ideas is mutually beneficial to the development of both models. As this analysis will show, the metacognitive dimension of metaliteracy is essential for today's complex and divided information environment and can be drawn

from the six frames of information literacy, even if not fully described that way in the *Framework*.

DESIGNING METALITERATE LEARNING ENVIRONMENTS

Metaliteracy inspired the creation of multiple learning resources, including a competency-based digital badging system and four metaliteracy MOOCs. Associated resources have been developed to promote the open nature of this work, including a blog (https://metaliteracy.org) that provides updates and resources, a separate website that shares content from the digital badging system, and a YouTube channel that features metaliteracy videos and animations. Most of the metaliteracy resources have been supported by Innovative Instruction Technology Grants (IITGs) from the State University of New York (SUNY), which promote collaboration among SUNY colleagues. As metaliteracy evolved as a pedagogical model, it was put into practice through innovative projects that leveraged the application of emerging technologies and social information environments. The collaborative nature of this work allows for partnerships among faculty, librarians, instructional designers, videographers, and content experts.

METALITERATE LEARNING AS SEEN THROUGH SIX FRAMES

The Metaliteracy Goals and Learning Objectives informed the development of several learning environments that prepare individuals to be reflective producers of information. This descriptive analysis of one specific learning activity will highlight the key metaliteracy elements while identifying the frames of information literacy and associated knowledge practices and dispositions most salient to that particular pedagogical strategy. This exploration provides a starting point to highlight the inherent linkages between metaliteracy and information literacy while illustrating pathways for applying metacognitive reflection in different settings.

CULMINATING PROJECT IN A POST-TRUTH MOOC

The Metaliteracy Learning Collaborative developed four MOOCs, beginning with a connectivist MOOC (cMOOC) followed by two xMOOCs, Empowering Yourself in a Connected World (in Coursera) and Empowering Yourself as a Digital Citizen (in Canvas). An analysis of these first three MOOCs by members of the Metaliteracy Learning Collaborative discussed metaliteracy as a "framework to address the challenges of learner-centered MOOC design."[39] As part of this examination, the authors raise questions about how to apply this model to support both learner-centered pedagogy and self-regulation in MOOCs. Kelsey O'Brien and colleagues conclude

that metaliteracy "prepares learners to take on active, collaborative roles in complex online learning environments" while also advancing "the metacognitive and affective domains that are especially pertinent to self-regulation challenges and opportunities presented by complex, decentralized MOOC environments."[40] After applying metaliteracy in three MOOCs, the authors argued for developing "a hybrid Metaliteracy MOOC that would focus less on the lectures found in xMOOCs, and more on user-generated content, collaborative knowledge creation, and student-driven learning promoted in cMOOCs, while supporting learners as teachers and contributors to the course."[41]

The idea of combining features of cMOOCs and xMOOCs led to the development of a fourth metaliteracy MOOC, Empowering Yourself in a Post-Truth World, in the Open edX platform. This MOOC is supported by a SUNY IITG and explores themes from the book *Metaliterate Learning for the Post-Truth World*.[42] The course is hosted at the University at Buffalo to leverage the Open edX instance the university developed and features six interrelated modules, including:

1. Empowering Yourself for the Post-Truth World
2. Who Are the Experts?
3. Can We Build Trust Online?
4. False Representations in Constructed Media
5. Raising and Sharing Our Voices
6. Reinventing a Truthful World

The arc of the course examines post-truth concerns and then explores what is required to reimagine a truthful world while building communities of trust. As part of this MOOC experience, learners examine original video content developed by the instructors as well as openly available readings and multimedia resources. Participants complete several interactive learning activities, including self-check questions, matching exercises using visual materials, surveys, word clouds, and discussions.

Since one of the goals of the post-truth MOOC was to try and combine connectivist principles with features from a structured xMOOC, the final project requires learners to produce and share a media project that reflects the course themes. This approach is fundamental to metaliteracy and is supported by the six frames of information literacy. The question prompt for this assignment asks learners to reflect on the course topics that resonated with them the most. Learners are encouraged to think about their own experiences with post-truth and imagine what specific "action steps" are needed to reinvent a truthful world. Several examples are provided, including moving beyond confirmation bias, challenging media misrepresentations, promoting the importance of experts and expertise, and contributing to the development of a community of trust, among other suggestions.

Learners are encouraged to create the project in any format they choose and are presented with several examples, including "poster, video, lesson plan, podcast, infographic, digital story, multimedia presentation, or web site."[43] In developing content,

they are asked to consider the context for this work, including setting, audience, and format. Learners are reminded that the project provides a chance to communicate what they have learned in the course as applied toward building communities of trust in a truthful world.

METALITERACY AND THE ACRL *FRAMEWORK*

This part of the chapter delves into the *Framework* to identify ideas that align most directly with metaliteracy in support of the post-truth MOOC.[44] The content of the course addresses the first frame by illustrating that "authority is constructed in that various communities may recognize different types of authority" because it addresses concerns about experts and expertise through the content and associated learning activities. Learners gain insights about expert and authoritative voices as essential, even in social information environments that intentionally level the playing field to encourage wider participation.

While everyone may have a voice in these environments, some are louder than others, and the ability to differentiate between an expert and a novice is crucial. As learners grow as experts themselves, they will "know how to seek authoritative voices but also recognize that unlikely voices can be authoritative, depending on need." This is an important distinction that validates different kinds of expertise and authority within a community while also recognizing professional roles, and being able to identify expertise, in these settings.

In the MOOC, learners apply the knowledge practice to "recognize that authoritative content may be packaged formally or informally and may include sources of all media types" through the study of multiple content sources and also in the final project as they make their decisions about what kind of media type to use in their own production. They also "acknowledge they are developing their own authoritative voices in a particular area and recognize the responsibilities this entails" since they are communicating and sharing what they learned in the course about issues related to trust, truth, and expertise. The final project requires proper attribution of all materials and encourages sharing this work in the course wiki.

The MOOC supports learners to "develop awareness of the importance of assessing content with a skeptical stance and with a self-awareness of their own biases and worldview" since it addresses confirmation bias in oneself and in information sources. The reflective nature of the final assignment, in particular, emphasizes self-awareness and one's worldview in relation to others, one's community, and to issues surrounding post-truth circumstances.

As a final project that requires the production of information from a selection of various formats, learners gain knowledge about Information Creation as a Process, the frame most closely aligned with metaliteracy. Since participants need to make choices about the format, they will employ the knowledge practice to "assess the fit between an information product's creation process and a particular information

need" in their creative work. As they think through audience considerations they will begin to "recognize that information may be perceived differently based on the format in which it is packaged," especially since they are being asked to communicate their reflections about key course themes and will need to think through choices about format and presentation. The MOOC module that exposes the challenges of constructed media to misrepresent information may impact their thinking on this approach as well. Several of the associated dispositions to this frame support this final project. In particular, MOOC participants who complete this project will "accept that the creation of information may begin initially through communicating in a range of formats or modes," especially as they review their options for communicating their ideas. Ultimately, learners may "understand that different methods of information dissemination with different purposes are available for their use" as they consider which format most effectively supports the communication of their original ideas.

Since the final project sets a fairly high goal for learners to produce something that will "contribute to rebuilding a collaborative and participatory world of truth and reason," they will understand that "information has value" based on the resource they discover as part of this research activity and produce through their creative response. Participants are required to apply the knowledge practice to "give credit to the original ideas of others through proper attribution and citation" for all external sources of information.

They also think through how to "articulate the purpose and distinguishing characteristics of copyright, fair use, open access, and the public domain" if they choose to apply a Creative Commons license to their own creative work. The content of the MOOC, especially the module about the challenges with trust online, should provide insights for learners to "understand how the commodification of their personal information and online interactions affects the information they receive and the information they produce or disseminate online," which may also impact the format they select and the extent to which they will share it. In this context, the most relevant disposition associated with this frame is that learners will "see themselves as contributors to the information marketplace rather than only consumers of it," which is another foundational element of metaliteracy as learners take on the pivotal role of producer of information.

Throughout the MOOC, learners are immersed in an iterative process that embodies "research as inquiry," as multiple perspectives are explored and participants contribute and learn from each other. The final project provides an opportunity to "synthesize ideas gathered from multiple sources" presented in the course and through one's own inquiry and to "draw reasonable conclusions based on the analysis and interpretation of information" in the creative project. Rather than a traditional research paper that often culminates in established courses, the final assignment for the MOOC encourages producers to create a project that applies technology and contributes in a positive way to a larger learning community.

Several of the dispositions associated with this frame relate to the final project, including the insight to "consider research as open-ended exploration and engagement with information," especially since learners have so much freedom to identify the post-truth issue that resonated most and to develop a creative response using a format of their own choosing. As learners progress through the course and contemplate their own contribution they are encouraged to "value intellectual curiosity in developing questions and learning new investigative methods," leading to an informed articulation of ideas through creative expression.

As part of the MOOC experience, participants are engaged in "scholarship as conversation" and actively contribute to this discussion as their own scholarly voice emerges. Learners are encouraged to apply the knowledge practice to "critically evaluate contributions made by others in participatory information environments" by engaging in the discussion and responding to peers. Several of the related dispositions for this frame support this project as well, including the ability of participants to "understand the responsibility that comes with entering the conversation through participatory channels" as they make choices about their format and venues for sharing. As participants find their way through this open learning environment they will discover "searching as strategic exploration," but certainly go beyond search engines to consider this space as "nonlinear and iterative, requiring the evaluation of a range of information sources and the mental flexibility to pursue alternate avenues as new understanding develops."

Although not as decentered as a connectivist MOOC, this environment does require the learner to stay engaged and participate in a number of self-directed learning activities. In the final project, learners need to curate and create materials and apply knowledge practices, such as the ability "to understand how information systems (i.e., collections of recorded information) are organized in order to access relevant information." Producers of information apply several of the associated dispositions, such as the ability to "persist in the face of search challenges, and know when they have enough information to complete the information task," especially as they make decisions about what to include in their project to communicate with the intended audience.

CONCLUSION

Metaliteracy and the ACRL *Framework* both developed as a response to the outdated *Standards* and through significant changes in the field as well as transformations in the information landscape. Each model developed in distinct ways based on influences within the field of library and information science and beyond this discipline, as well as radical changes in the information environment. The openness of each framework provides opportunities for teachers and learners to adapt the core principles of both approaches to a multitude of learning situations. As part of this

translation of ideas, the frameworks are compatible in supporting the individualized needs of learners in academic and lifetime settings.

This analysis of the MOOC final project through the six frames of information literacy illustrates the affinity between information literacy and metaliteracy. Since information literacy itself was originally envisioned *as* a metaliteracy, it is not surprising to see strong linkages between the two models. Practitioners in the field who have been seamlessly integrating both approaches and applying key principles from each will not see this relationship as unexpected, either. At the same time, metaliteracy has evolved with a much bolder assertion of metacognitive reflection, within the context of four domains of learning, than originally was envisioned in the first article that introduced the concept. Metaliteracy has also developed through collaborative practice and applying emergent technologies such as MOOCs as an intentional strategy to explore the concept in unique but purposeful ways. The metacognitive aspect of metaliteracy has been a driver for these projects and suggests the need for further development of this approach in information literacy as well.

This exploration of one metaliterate learning activity through the six frames of information literacy is limited because it is descriptive and interprets the frames as well as the associated knowledge practices and dispositions after the metaliteracy activity was designed. But this chapter illustrates the importance of bringing together both frameworks in support of integrated learning design, especially in today's polarized information environment, which requires careful attention to expertise, authority of information, and the ethical production of new knowledge.

An important next step will be to design learning activities with both frameworks in mind and to assess learning within this combined context. Rethinking our pedagogical strategies is an ongoing process to identify and apply meaningful theoretical connections to inform praxis. Converging metaliteracy and information literacy through metacognitive reflection offers much promise to apply both models while creating dynamic synergies between the two approaches. As the frameworks are brought closer together to meet the changing needs of learners, we must renew institutional supports for innovation and reimagine opportunities for collaboration among colleagues in multiple disciplines.

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16

Extending the *Framework* for the Benefit of Praxis: A Strategic Literacy-Based Approach to Diversity Education (SLADE)

Bharat Mehra and Keren Dali

This chapter builds on select experiences of a faculty member and a journal editor in working with library and information science (LIS) students enrolled in INSC 590 (Diversity Leadership in Information Organizations), a graduate course taught in the School of Information Sciences (SIS) at the University of Tennessee, Knoxville (UTK), in spring 2018. The analysis provides a strategic literacy-based approach to diversity education (SLADE) that is theoretically informed by the:

- strategic diversity manifesto (SDM) for libraries in the twenty-first century;[1]
- Diversity by Design concept (DbD, for short);[2]
- ACRL *Framework for Information Literacy for Higher Education*;[3] and
- values of actionable advocacy.[4]

Further, the authors explore how the principles of information literacy (IL) and diversity education mutually reinforce one another. IL guides diversity education, whereas learning in the context of diversity makes future LIS professionals more information literate. IL in this discussion is not equated to academic or research literacy but serves as a foundation of active civic and professional participation.

The discussion is based on a critical assessment of the components and dynamics of the course (taught by Dr. Bharat Mehra) and its integrated collaboration with the *International Journal of Information, Diversity, & Inclusion* (*IJIDI*; edited by Dr. Keren Dali) through the lens of the *Framework*, and namely, its six frames: Authority Is Constructed and Contextual, Information Creation as a Process, Information Has Value, Research as Inquiry, Scholarship as Conversation, and Searching as Strategic Exploration.[5] The following two simultaneous and complementary processes unfolded over a period of twelve months:

- The level of IL in the participating students increased at every stage of the course.
- Diversity mind-set was developed through an improved state of IL through engagement with diverse information organizations (as part of the course work) and *IJIDI*.[6]

SLADE combines the aforementioned theoretical perspectives and extends the *Framework* by integrating practical diversity advocacy in its benefit to praxis. The narrative focuses on successes and challenges in translating the *Framework* into real-life applications in diverse information organizations, using holistic professional practices, rather than traditional library instruction, as a case in point. SLADE links IL and diversity advocacy to identify concrete strategies that helped students develop meaningful outcomes that extended beyond a university course while generating progressive impacts in their local and regional environments.[7] It also demonstrates the continuity between LIS graduate teaching, professional practice, and scholarly communication that LIS instructors, students, and practitioners will find useful with practical examples, specific suggestions, and insights on combining diversity, advocacy, and IL in graduate courses.

THEORETICAL GROUNDING

The intersecting theoretical concepts that informed SLADE were operationalized in the course's built-in opportunities for students to engage with information organizations in the context of diversity and inclusion and to disseminate the results of their original work to the broader professional and scholarly community. SDM was initially designed to offer public libraries a deliberate strategy to systematically include diversity on their web spaces. Its components—the *who*, *what*, and *how*—were integrated into the INSC 590 course for students to evaluate the websites of their collaborating information agencies and were defined in these terms:

- The *who* identified specific user groups underserved at the collaborating information agency and community.
- The *what* focused on seven subcategories including information sources (collections and resources), information policy and planning (strategic representations and committee structures), and connections, both internal and external (centers and organizations, community engagement, and news and upcoming events).
- The *how* identified specific illustrative examples on the information agency's website of the *what* information offerings provided to the *who* population.[8]

The DbD concept was articulated in the 2017 eponymous article in *Library Quarterly* by Keren Dali and Nadia Caidi. Questioning why the state of diversity in LIS is not improving significantly or fast enough, the article conceived of diversity

as "integral and structural," not a "mere add-on."[9] It calls on both LIS academics and practitioners to consider diversity principles as indispensable to professional practice, education, and research agendas irrespective of subject areas. The diversity mind-set in the DbD reflects the following assumptions that diversity is:

- a reality of life, not a problem to solve;
- "everybody's business and not a concern of minority groups" alone;
- "integral to social structure, daily interactions, learning environments, professional settings, and human relationships"; and
- a "concern for the health and function of the diverse society as a whole."[10]

DbD expands and augments the social justice lens through systems thinking[11] and holistic vision.[12]

Notwithstanding the conceptual strength and applicability of SDM and DbD, SLADE would lack practicality if it were not combined with actionable advocacy. The Public Library Association (PLA), a division of the American Library Association (ALA), provides a narrow, inward-looking, library-centric definition of advocacy, positioning it as "the process of acting on behalf of the public library to increase public funds and ensure that it has the resources needed to be up to date [which proves] critical to the success of libraries."[13] This limited navel-gazing characterization does no justice to the long history of public library engagement in social issues and their impact on social change.[14]

The role of the students in creating evidence to support their proposed strategic actions on behalf of a diverse, underserved population at their collaborating information agencies was an example of actionable advocacy that professional associations like the PLA should also acknowledge and embrace. Otherwise, the PLA and other national organizations leading the field are bound to miss out on telling inspiring stories of community engagement, especially those coming from such underrepresented professional sectors as rural libraries.[15] Moreover, by ignoring the community context in which libraries are embedded, the PLA may unwittingly diminish the social value and significance of libraries, which results in dwindling public recognition and funding.[16] Finally, the notion of advocacy as actions on behalf of others is giving way to the idea of empowering community members to gain control over their lives and life circumstances, and acting with community members as opposed to speaking for them is something that budding information professionals need to master. Incidentally, the concept of IL has experienced the same limited applications and has for the longest time been equated to research or academic literacy and bound to the context of learning environments (schools, colleges, universities, etc.). However, IL is not simply a skill that facilitates formal or informal learning; it is also a foundation of civic participation and active membership in professional communities. In this recasting, IL can extend classroom interactions to real-life professional engagements and scholarly communication ventures for broader practical applications.

ENGAGING STUDENTS THROUGH SLADE

This new outlook guided the choice of the *Framework* as a binding concept underlining SLADE, with a clear rationale to expand academic learning and diversity education through practice-based information and advocacy experiences. It thus extended IL to community literacy and community engagement via diversity education in LIS education.

The Graduate Course on Diversity Leadership in Information Organizations

The course was designed to prepare future information professionals to apply IL principles and diversity advocacy practices to the development of inclusive services to underrepresented populations in information organizations of students' choice. Underrepresentation was defined in terms of race, ethnicity, national origins, gender, sex, gender identity, sexual orientation, physical or mental ability, veteran status, level of education, income, age, geography, and religion, among others. The two major course projects included:

- Creation of the Diversity & Inclusion ePortfolio (D&I-eP) based on the student analysis of existing responses to diversity and inclusion in an information/community organization and the proposal of strategic diversity action plans for this organization. These plans identified future directions of progressive growth and professional practice that were informed by the application of IL principles to cultural competence, inclusion, diversity advocacy, and effective leadership in a range of workplaces.[17]
- Preparation of a peer-reviewed manuscript for consideration for possible publication in a special issue of *IJIDI*.[18] Several select projects were turned into quality peer-reviewed articles, making students' fieldwork accessible to the wider professional readership.

The online lecture-seminar course was delivered via Zoom with synchronous weekly instructor-student meetings around manifold student opportunities to critique a self-selected information organization in its select diversity and inclusion responses. Based on their assessment, students developed the D&I-eP, sharpening their analytical skills and translating theoretical knowledge into practical context-dependent applications. Collaborating with an information organization of choice (e.g., library or cultural heritage organization, educational institution, business or corporation, government or affiliated department, religious organization, nonprofit agency, etc.) encouraged each student to identify and reach out to a community-based information agency, thus venturing out of their comfort zones. The chosen agencies became students' collaborators and community partners providing real-life contexts for student work. An underlying rationale was that the stronger ties students developed with their agency, the better access they would have to contextual

information, strategic plans and policies, authoritative sources, people, specific circumstances, and diverse perspectives in that setting. This guiding assumption proved to be fruitful.

These contextual course experiences with action-oriented diversity agendas also served as a test bed for the reconceptualization and broader application of the *Framework*.[19] Each course assignment was strategically designed to integrate one or several frames, as will be elaborated and illustrated later on. In total, there were seven course assignments: Welcome and Reflection (5 percent), Context (10 percent). Information Agency's Diversity Responses (15 percent), Identification of Best Practices (15 percent), Case Study Analysis (10 percent), Community Analysis (10 percent), Future Directions (10 percent). The development of a manuscript for *IJIDI* helped students to translate their D&I-eP into a scholarly communication outcome (25 percent).

The primary data set upon which rest the analysis and outcomes discussed in this narrative include critical, reflective gathering of insights of course experience from the collaborating course instructor and journal editor's perspectives. Participatory observations, communication, and interactions with the students were considered in this assessment. Student assignments and contributions in the D&I-eP and their manuscript drafts provided tangible artifacts. So did their feedback in the formal student course evaluations.

Partnership with *IJIDI*

Collaboration between the iSchool at UTK and *IJIDI* started before the course was taught in the spring of 2018, and was chosen strategically, given the journal profile, mission, and scope. *IJIDI* is relatively new, open-access, peer reviewed, and international, dedicated specifically to issues of social justice, diversity, and inclusion.[20] One ongoing commitment of the *IJIDI* editorial team is working with emergent authors—both young scholars and new professionals—who would like to share their opinions and research in the public forum. The goal ultimately is to help authors make connections between theory and practice and build bridges between creative ideas and their implementation, thus making knowledge acquired in the classroom or workplace of practical meaning outside of the immediate setting. With that mission in mind, the course collaboration with *IJIDI* allowed for applying the learning objectives and diversity theory to students creating online professional portfolios, developing practical actions to promote organizational change, and publishing scholarly articles derived from the work. The collaboration played an important role in SLADE, in that students had to be mindful that their publishable product could not resemble a course assignment. It had to meet journal requirements and scope but also suit its primary audience, which is international and interdisciplinary and consists of academics, practitioners, and students around the world.

Working on a journal article for publication presented another learning curve for students, beyond the bounds of course requirements. They had to learn the basics of

the scholarly publication process, with its conventions, stages, and back-and-forth communication among authors, editors, and reviewers. Students also learned to write according to conventions of academic writing, adhere to the journal submission guidelines, and master an online journal management system. However, social learning around this process was even more significant in SLADE. Students had to work on deadlines and respect the schedule of the editorial team, reviewers, and editors; they took responsibility for timely, professional, clear, and courteous communication to make sure that their articles went smoothly through the publication pipeline. SLADE provides an unparalleled opportunity for professionalization and learning the professional cultural etiquette. Students also had to develop skills to interpret and address reviewers' comments, differentiating between mandatory and optional ones, those that would improve the manuscript and those that took it in a direction desired by reviewers.[21] They had to realize the importance and value of commitment and teamwork in something that at a cursory glance seemed like a solitary undertaking, appreciating the contributions of time, effort, and expertise of their course instructor and mentor, peer reviewers, and the editorial team. Finally, students developed emotional resilience toward constructive criticism and learned to work with it in a way that allowed them to move forward with renewed energy instead of feeling discouraged.

Putting It All Together

Of course, students were continuously helped and advised throughout this process by both their professor (who was also the issue's guest editor) and the journal editor in chief. Both made sure that discouraging, unsubstantiated, and unpleasant comments did not make it back to the authors. However, students had to do much legwork themselves, including working through emotional/psychological effects. Not all students came into this process with an understanding of how much collaborative input goes into the publication of each article, which accounted for the fact that some of them initially took this commitment as lightweight, an activity that they could drop out of if their schedule got too busy with other responsibilities, such as schoolwork, day jobs, family obligations, and other routine chores. Explicating and clarifying the nuances of the behind-the-scenes publication process to new authors in SLADE was very helpful in overcoming these attitudes and perceptions. Equally helpful were attempts to show students the enduring professional and personal value of publishing in a peer-reviewed venue. For students stressed out with multiple responsibilities and running toward the goal of completing courses and graduating with their degree while facilitating their tuition payments by working, either full time or part time, working on a publication may not seem like a worthy investment. However, showing the advantage of being a published author for students' résumés and job interviews, for expanding their professional network prior to graduation, and for contributing valuable experience and theoretical insight to the professional literature for the benefit of practice truly helped the instructor-editor team to guide

students toward a new appreciation of the peer-reviewed publishing process. Similar to the community engagement built into the course, the publishing experience extended the interpretation and application of IL beyond the classroom, in innovative and meaningful ways, in each of the six composing categories of the *Framework* under discussion, as demonstrated in the following section.

SIX FRAMES IN THE *FRAMEWORK* AND THEIR MANIFESTATIONS IN SLADE

The content of each category in the *Framework* can be viewed through the lenses of course-related work and publishing activities, respectively.

Authority Is Constructed and Contextual

The first frame guides us toward an understanding that "authority is constructed in that various communities may recognize different types of authority. It is contextual in that the information need may help to determine the level of authority required."[22] For the students enrolled in the course, the source of authority was an information organization or agency, that is, their collaborating community partners. Information derived from the websites of community partners became the basis for developing their own expertise, reflected in a critique of the existing information practices at the information agency in question. The entirety of the project experience was contextualized in the setting and community of the information agency. The website evaluation was conducted in terms of representation (or a lack thereof) of information offerings (the *what* in the SDM) related to the select diverse population (the *who* in the SDM) that established the information need of the context.[23] Students' critical literacy abilities and learning of relevant knowledge practices were facilitated through all the course assignments directed toward diversity advocacy based on the embedded evidence from the agency/community context. As an example, the "Context" assignment involved student analysis of contextualized information, whether it was about the environmental setting of the collaborating agency; identification of relevant local resources on diversity; creation of an agency profile from a diversity-related, system-centric perspective; or development of community-based user profiles from a diverse patron's point of view.

To become information literate as members of the scholarly communication community, new authors had to learn about different types of recognized authorities who exert influence in the peer-review process, including editors and guest editors, peer reviewers, and members of the management and production team. They learned to give legitimacy to the plurality of voices and points of view, becoming aware that the conceptualization of diversity varies greatly within the research community and that the varying understandings of diversity may affect the nature of peer-review comments and editorial guidance in the process of scholarly communication. They

learned that authoritative, expert feedback received from peer reviewers may differ from that given by their professor, that practitioners and academics acting as peer reviewers may underscore different aspects of research and have different expectations of the final product, and that it is crucial to balance data presentation to account for the mixed academic-practitioner audience in LIS.

Fostering key aspects of the diversity mind-set, this experience has certainly helped emergent authors to realize that diversity is integrated in all facets and stages of educational and scholarly activities, that this is an integral part of what we do, and that diversity has multiple manifestations in multiple contexts.

Information Creation as a Process

The second frame highlights the iterative nature of information creation and use processes in scholarship, not restricted by the format, delivery modes, and/or information resource product.[24] In an extended and complex application of IL that goes beyond traditional academic settings and involves information research, management approaches, dissemination, information use, and advocacy; student exploration in the course started from their own critical and reflective assessment and advanced to the development of the D&I-eP and the *IJIDI* manuscript as key products. However, information creation in SLADE did not necessarily end with producing a manuscript that could be considered for publication. These concrete deliverables instead became milestones in students' professional networking and personal growth. They also provided the foundation for future collaborations with information agencies on the development of their strategic information responses to underrepresented aspects of diversity and inclusion. From an instructor's perspective, this process had to be intentionally structured within the course organization. For example, the purpose of the "Welcome and Reflection" assignment was for students to translate how unique aspects about their select interest in diversity and inclusion could shape actions of change and why they were important in today's world as well as how these might inform their specific career path and professional journey. In the "Future Directions" assignment, students came full circle in developing a strategic plan that included a revised mission/vision, goals, objectives, activities, resources, timeline, and so on (as relevant) at the collaborating information agency in relation to their focused aspect of diversity and considered how their proposed actions might help the parent organization become more successful.

The publishing component of this collaboration related to the revising and dissemination stages of the information-creation process. Students had to rework their course assignments in the format and style acceptable for a peer-reviewed international publication that reaches practitioners, academics, and students, and an interdisciplinary audience of readers. The learning curve included mastering selectivity in data presentation; finding an economical, clear, user-friendly, and accessible format; and using the writing style that is free of jargon and "academic speak." To remain respectful and considerate of the diverse communities that served as both subjects

and collaborators, emergent authors had to consider issues of privacy and confidentiality, anonymizing data in reporting without ruining the integrity and usefulness of the article, and choosing reflective and inclusive terminology that did justice to the community in question.

For the authors, some of whom were representative of diverse communities based on surface-level and deep-level characteristics, the publishing experience has illustrated that diversity is not a sole concern of minority groups; it is not only everybody's business but also everybody's shared responsibility.[25]

Information Has Value

The third frame recognizes varied ways in which information has value, as means of education, influence, and negotiation shaped by legal and socioeconomic factors.[26] Students generated value by focusing on the local and regional aspects that are often overlooked in public practice and academic discourse. For example, in the "Context" assignment, students spotlighted the sociocultural dimensions of the environmental setting in terms of its strengths, weaknesses, opportunities, and threats toward the broader and/or specific aspects of diversity. In the same assignment, they also created value for their community partners by highlighting agency profile and strategic-planning characteristics that limited or facilitated broader and/or specific aspects of diversity and inclusion.

The learned scholarly conventions, practical experience, and related networking and professional communication allowed emergent authors to understand how the process of translating academic research into real-life applications helps them both to develop an influential voice and better understand the world, specifically the communities they work with. The notion of "voice" had a dual meaning in this case. On the one hand, students stepped out as intellectual leaders and diversity advocates who had an opinion supported by empirically collected data. On the other hand, they gave a voice to the diverse communities and organizations that were the foci of their studies. Here, negotiating their membership in the scholarly communication community and the community of diversity researchers worked in tandem, mutually reinforcing one another. The experience gave authors the opportunity to take diversity conversations from the local level, where it is seen as an issue relevant to specific groups, to the level of professional discourse. This, in turn, served as a manifestation of the diversity mind-set and advanced diversity advocacy.

Research as Inquiry

The fourth frame focuses on open and unresolved questions, often in complex and new areas of inquiry within iterative research activities.[27] Student evaluations of existing information practices at the collaborating information agencies served as a basis for proposing a strategic plan to remedy or expand a specific aspect of diversity and inclusion. By so doing, they extended the frame to "Research as Inquiry and Ac-

tion" (i.e., advocacy). The "Information Agency's Diversity Responses" assignment provided a pathway for applying the SDM as a rigorous and systematic method.[28]

Initiation into the scholarly communication community and the community of diversity researchers served as an illustration that the process of research and information creation does not end at the stage of report writing. If authors want to see their work making a genuine community impact, further dissemination is crucial, and in the process of dissemination, research reports are modified, new insights appear, new ideas crystallize, and new theorizations become possible. In this case, research inquiry continued through reviewers' feedback and the process of revising and rethinking original submissions, through conversations with both the course professor and the editorial team, and through working with finalized manuscripts that went through the hands of copy editors, typesetters, and proofreaders. Each of these stages had the potential to alter the form and content of the original manuscript. This gave the authors much food for thought about the changes that strengthened their articles, making them more innovative and impactful, and the changes that took the original piece in a different direction, impacting its integrity. As before, this experience allowed the authors to observe the diverse contributions and types of expertise that go into the publication process and to see a collaborative face of diversity.

Scholarship as Conversation

The fifth frame provides for a sustained process of discovery, integrating inclusiveness toward multiple interpretations and insights.[29] The offered course was effective owing to the collaborating information agencies' willingness to support students' critical assessment of their information offerings since they recognized the value of developing an ongoing conversation within the scholarship process of engagement and development of proposed actions.

The iterative process of negotiating the final research product through continuous inquiry fed into the notion of scholarship as conversation. While conversations started in the classroom, when students created community partnerships, collected data, and communicated their findings back to the organizations in question, these conversations continued during the publication process. It allowed students to holistically see the entire cycle of knowledge production initiated by community needs and strengths and resulting in practice-oriented and theory-guided suggestions for further organizational development. Specifically, the process allowed students to master the creation of practice models and actionable suggestions in their respective areas of interest. It gave them the opportunity to leave the conversation open-ended, ongoing, and multisided, now involving a broad community of practitioners and scholars who can use, critique, and improve the suggested models. Had the learning process stopped at the end of the course and resulted only in the production of the D&I-eP, the experience would have been more contained and the created scholarship would have a limited reach and exposure.

The actual decision to engage in producing publishable scholarship related to diversity and inclusion in LIS organizations—or even more fundamentally, the decision to take the course Diversity Leadership in Information Organizations—is evidence that students recognize diversity as an integral part of not only professional activities but also everyday life. In the current competitive job environment, most students try to take courses that will facilitate their future employment and/or career progression. The fact remains that these students consider diversity a worthy undertaking not only for a graduate course but also for a voluntary extracurricular publishing activity.

Searching as Strategic Exploration

The final frame identifies nonlinear, iterative, and flexible traits of the searching process, open to alternate and wide-ranging evaluation of diverse sources.[30] Students modeled these aspects throughout their work in the course. For example, in the "Best Practices" and "Case Study Analysis" assignments, they developed traditional information sources (e.g., a bibliography of readings, web resources) and performed an environmental scan of best practices in similarly scaled agencies. They also integrated primary sources in their search process based on assessment of existing information practices at the collaborating information agency related to specific diversity and inclusion concerns. Students negotiated new meanings and added new sources of information to their arsenal as they moved through the course assignments. Information searching involved working with traditional venues (e.g., selecting secondary literature to support their writing and arguments) and engaging community partners as sources of information. Their proposed strategic action plan is an example of a primary product/deliverable that was not in existence prior to the course project and that was especially developed during the course.

At the stage of article publishing, searching for information essentially meant seeking reflections, feedback, and opinions from peer reviewers and editors. However, this process also meant searching for expert validation of their methodology, approaches, and quality of writing and presentation. In a traditional classroom, this kind of information is usually not sought by students voluntarily; it is usually provided by course instructors as part of the course routine. In this case, students voluntarily exposed their manuscripts to external, expert, peer-reviewed feedback, which was provided in several stages. Throughout the process, authors sought information that would give them a measure of the quality of their work, the importance of their findings, and the possible reception and practical use that their creations would enjoy once published. Coping with information contained in peer review and editorial feedback is often not easy and requires not only intellectual processing but also psychological preparedness. The instructor-editor mentorship process assisted in helping the authors through this by developing a coping mechanism.

MOVING FORWARD TOWARD SLADE

A key requirement in SLADE calls upon LIS educators to incorporate elements of community engagement in their courses in order to provide students with real-life opportunities that advance information learning in the context of diversity and inclusion, allow students to practice the skill of actionable advocacy, and contribute to the development of IL broadly conceived. Neither LIS courses nor IL practices can exist in a vacuum; to be meaningful, they need to be rooted in professional practice and specific community contexts. Collaborating with an information organization of choice played a significant role in ensuring this practical merit and a theory-practice connection. Most students chose an information agency to collaborate with where they were already working or had previously worked or volunteered; as a result, they developed an ongoing positive collaboration, contributing to the workplaces in a different capacity, not only as employees but also as consultants and partners. Similarly, all of them attempted to turn their course experiences into a shareable product that would be useful to a broader professional community. Four students who chose to take their work through the multiple stages of writing and revisions also saw their coursework published as a peer-reviewed article.

SLADE is a new kid on the block of LIS education. It signifies a practice-theory approach that builds on several intersecting philosophies and applied methods (e.g., SDM, DbD, actionable advocacy), bringing them together in the context of IL. The *Framework*, originally created for supporting IL as an academic and research skill, is expanded to encompass civic participation and meaningful, impactful professional engagement. Through discursive analysis and concrete examples, the chapter shows how the six frames were relevant in the context of a graduate course and students' first steps in the world of scholarly publishing. It also demonstrates the inspirational nature and utility of the educator-editor partnership, as part of SLADE implementation.

To be sure, SLADE has merit on its own as an educational approach for learning about and practicing diversity, inclusion, advocacy, and IL. However, it can also serve as a model for developing other new frameworks that integrate multiple concepts, combined educational philosophies, and experiences in various areas of LIS and higher education. The sky is the limit here, and it is up to educators to get creative, with an eye on implications for praxis and community impact. This is particularly important in professionally oriented, interdisciplinary fields, including but not limited to LIS, social work, nursing, urban planning and architecture, public health, criminal justice, and law, among others.

NOTES

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17

Teaching Future Librarian Educators Using the ACRL *Framework*: A New Graduate-Level iSchool Teaching Certificate

Carla Stoffle, Nicole Pagowsky, and Yvonne Mery

Most librarians learn how to teach on the job, finding support informally or through education offerings, standards, and guides from professional associations. Master's programs in library and information science (LIS) have been slow to recognize and respond to the need to prepare librarians for teaching. In a recent survey of LIS syllabi, Laura Saunders found that among the fifty-five ALA-accredited schools there were only seventy-three stand-alone courses in instruction for students other than those in school library media programs.[1] Only seventeen programs offer two courses, three offer three, and one offers four courses.[2] In our own research on the topic to develop our program's teaching certificate, we examined the Association of College and Research Libraries (ACRL) Instruction Section website Library Instruction Courses Offered by Accredited Master's Degree Programs in Library and Information Studies. From this data, we found that of those programs listed, thirty-nine offer at least one course for students other than those in the school library media program. Fourteen offer two or more courses, and three offer specializations—University of Missouri, San Jose State, and now the University of Arizona.[3]

WHERE DO LIBRARIANS BELIEVE THAT THEY SHOULD LEARN HOW TO TEACH?

Courtney Douglass,[4] Nicole Cooke and Merinda Hensley,[5] Merinda Hensley,[6] and Heidi Julien, Maria Tan, and Shannon Merillat[7] strongly assert that teaching librarians to teach is the job of graduate library programs and most schools are not doing it very well. A survey by Theresa Westbrock and Sarah Fabian suggests that the majority of teaching librarians feel that instruction is a core function of the library, and that this is something master of library and information science (MLIS) pro-

grams need to better represent.[8] An Ithaka survey of academic library directors and deans indicates that these employers believe instruction is important and should be provided by master's programs.[9] Saunders adds to this argument, stating that "even students in programs that do have instruction courses are usually limited to one such course, and actual practice in designing and delivering instruction sessions is usually limited to one or two opportunities within these courses."[10] More needs to be done to prepare future information professionals to teach.

Based on this literature and our knowledge of a gap in MLIS program instruction curricula, we determined that a greater educational offering should be provided within the master's program at the University of Arizona iSchool. Nicole Pagowsky and Yvonne Mery of the University of Arizona Libraries joined with Carla Stoffle and Bruce Fulton (faculty in the iSchool), to develop a certificate in instruction. This certificate entails coursework based in theory and practice to build abilities as an educator in order to teach patrons of all types of libraries. It is offered to three audiences: for current students as an option within their MA program, for librarians already possessing an MA as a continuing education option, and for library workers with a bachelor's who wish to further develop their skills as a stand-alone option.

WHY A CERTIFICATE?

At the University of Arizona, graduate certificates are a means for professionals with advanced degrees to update their knowledge and skills and for current students to add additional depth and experience to the graduate program. They are designations added to transcripts to demonstrate that a student has participated in a systematic and coherent learning program to gain advanced knowledge and skills in a subject area. Certificates can vary in the number of credit hours involved from nine to eighteen.

For certificates to be approved at the University of Arizona, the Graduate College requires the proposers to document the job demand for such a program. We reviewed the literature documenting a growing demand for librarians with teaching skills. In the summer of 2017 we then reviewed a sample of academic and public library job ads in ALA JobLIST. We looked at all jobs advertised over a two-week period and eliminated any jobs that were administrative in nature or did not require an MLS, leaving a sample of 120 ads. This sample revealed that 44 percent of jobs advertised during that period required instructional expertise. A similar sample of jobs advertised on the Arizona State Library Jobline website and the job advertisement websites of six surrounding states revealed that 56 percent of the jobs advertised required instructional duties. A sample review of job ads by Douglass in INALJ found 50 positions in all types of libraries specifying a need for instructional skills.[11] Based on her review of job ads, she concluded that "teaching occurs across LIS professions. While MLIS students may anticipate a certain level of teaching in public or

academic libraries or museums, a short case study of Maryland institutions indicates a need for teaching skills throughout the information field."[12]

While data was being collected, it was decided that the graduate certificate in instruction and teaching for librarians and information professionals would require twelve credit hours and that it would be designed to build the knowledge and skills needed to create and deliver culturally sensitive, evidence-based, and innovative information literacy instruction. To ensure strong connections between theory and practice with application to current professional discourse, it was decided that the program would be designed around the ACRL *Framework for Information Literacy for Higher Education*, as this is also what is used by the University of Arizona Libraries' Instruction Program, of which Pagowsky is instruction coordinator. Librarians Mery and Pagowsky then established the certificate's learning goals, selected appropriate course designations, identified instructors, and established assessment and evaluation mechanisms. We discuss our rationale behind use of the *Framework* and its application to LIS students interested in a variety of library environments—not only academic—in the following sections.

What Are the Courses Required by the Certificate?

The courses required for the certificate are:

- LIS 581—Information Literacy and Pedagogy (3.00 units)
- LIS 583—eLearning for Librarians and Other Information Professionals (3.00 units)
- LIS 586—Learning Design for Librarians and Other Information Professionals (3.00 units)
- LIS 693—Internship (3.00 units)

OR

- LIS 698—Capstone (3.00 units) Whichever of these options is selected, the student will coordinate the placement and subject with the certificate adviser and develop an experience focused on developing and delivering instructional material. The related instruction should be information literacy focused, but there is flexibility based on students' projects, teaching environments, and goals.

What Are the Overall Goals of the Certificate?

The overall student learning outcomes for this program are that students will be able to:

- organize and manage different components of pedagogy in order to develop their own instructional identity and path;

- implement instructional design models into their own teaching in order to link best practices with appropriate teaching scenarios;
- design, deliver, and evaluate inclusive information literacy lessons for diverse learners that incorporate the latest educational theories, standards, and educational technologies; and
- evaluate their teaching philosophy, situated in diverse, learner-centered needs, through a critical lens in order to develop inclusive learning objects.

How Is the *Framework* Incorporated?

Incorporating the ACRL *Framework* into this certificate, through both subject matter and pedagogical approach, provides a more holistic structure for teaching. Frames are flexible, encourage dialogue, and provide an overarching philosophy to our teaching. Although we are more focused on using teaching-related material from the ACRL, not all of our students are interested in academic libraries: We have a wide variety of students either earning the instruction certificate or taking the courses separately as electives. Teaching with the *Framework* for all students can help provide grounding in common instruction approaches, and students focused on public, school, and special libraries have made apt connections between how the *Framework* functions and how it can aid in their own future (or at times, current) work. There is no formal documentation for teaching in public libraries with a set of standards or connections to the *Framework*, and so aspects of the frames can support various modes of instruction, regardless of environment. School librarians have their own set of standards through AASL, and this is included as a supplemental reading.[13]

At the University of Arizona Libraries, we adapted the *Framework* for our instruction program in line with our own set of outcomes, applicable to our campus. Our specific outcomes based on the frames include: Scholarship Is a Conversation, Research Evolves, Authority Is Contextual, Knowledge Is Co-constructed, and Information Is Power.[14] We use both an outcomes-focused approach, as well as an alternate "big questions" approach, derived from Grant Wiggins and Jay McTighe.[15] We wanted to apply the success of our campus-wide instruction program to our classes in the iSchool instruction certificate; this was evident through our focus on providing context for students to understand the research process, to experience productive failure, and to seek more socially just approaches to engaging in research. We made these connections because they are grounded in sound pedagogical theory and we want our students to be well versed in professional discourse and practice. Likewise, we hope our students will identify more strongly as educators through earning this certificate and be poised to take on greater leadership roles.

Regardless of teaching environment, librarians have struggled with an identity problem, particularly within teaching, as library instruction is essentially a double-feminized field.[16] Burgess explains the importance of moving more toward leadership in our instruction: "In adopting the *Framework*, academic librarians have an opportunity to take a greater and more active role in shaping our (often questioned)

identity as leaders in IL education. I believe librarians' identity as instructors might be more clearly pronounced and unmistakable if we challenged ourselves to expand our collaborations with faculty."[17]

In all types of libraries, regardless of subject matter, age group, and collaborations, we can focus on sound pedagogy and owning our expertise in teaching information literacy. We have scaffolded use of the *Framework* between our foundations course LIS 581: Information Literacy Pedagogy and LIS 583: eLearning for Librarians and Other Information Professionals. Regarding overall certificate progression, it is a requirement to take the foundations course first at this point in time, and the subsequent courses and internship/practicum can be taken in any order. Theory and discussion of praxis in LIS 581 sets students up for practice to explore, seek questions, and begin to own growing expertise.

LIS 581: INFORMATION LITERACY PEDAGOGY

The foundations course for the certificate, LIS 581, is structured as a seminar course and incorporates a great deal of reflection and revision. The certificate program is fully online, so designing a course based heavily on discussion in this format can be complicated. However, giving students opportunities to explore, reflect, and interact in a less structured environment is a powerful way to encourage them to make new connections between course material and lived experience. As Juliann Couture and Sharon Ladenson point out in their discussion of using the frame Research as Inquiry in a women's and gender studies course, "While librarians have traditionally focused on helping with finding answers, the process of developing questions is central to critical information literacy."[18] Students engage in the process of developing questions in LIS 581 through the peer-led discussion and are not only tasked to come up with questions for peers to respond to but are also encouraged to question the course material and ingrained ways of thinking. By using the *Framework* as both pedagogy and content (for *all* students, and not solely aspiring academic librarians), the goal is to expand connections to course material and critical information literacy. Dane Ward explains, "We discover the complexity and subtlety of an infinitely mysterious world. Information literacy is not a set of competencies; it is a way of being that comes from living the question."[19] Ideally, all students will have a common agreement as to what information literacy is and how it functions in any type of library through the foundation of the *Framework* and its related educational theory and pedagogical praxis.

The course learning outcomes, noted in the syllabus, include:

- Interpret and organize different components of pedagogy in order to develop your own instructional identity and path for lifelong learning.
- Engage in and critique ongoing professional conversations surrounding information literacy instruction in order to position yourself as a librarian educator.

- Evaluate your own teaching philosophy in order to align with evidence-based, learner-centered approaches.
- Examine pedagogy through a critical lens in order to develop inclusive learning environments and objects.
- Appreciate the value of both theory and practice in pedagogical approaches, engaging in praxis.[20]

As this course is a pedagogy-focused course, each week students engage in pedagogy by teaching their peers as discussion facilitators. Cooke and Hensley highlight the importance of both reflection and experiential learning in the teacher training of future librarians.[21] Student facilitators are tasked with completing the readings early and unpacking difficult questions and knowledge gaps in order to engage their peers in conversation. As other students respond, the facilitator must reply, reflect, and draw out deeper conversation. This can help students become more comfortable with admitting what they do not know and learning in collaboration with their peers, all while in the role of teacher. A particularly apropos strategy to this design is phrased as "thinking with," in which Shoshana Magnet, Corinne Lysandra Mason, and Kathryn Trevenen invoke Donna Haraway's strategy. The authors explain, "[T]his pedagogical strategy works in opposition to a neoliberal academy concerned only with pedagogy through competition. Rather than placing scholars firmly on one side or another, 'thinking with' refuses neat disciplinary divides."[22]

Power dynamics in the classroom can be tricky; however, they are something the *Framework* can help navigate, particularly considering the frames Authority Is Constructed and Contextual as well as Information Has Value. Power exists on a few levels. First, between peer scholars, or peer students, it can feel like there is a sense of competition. Encouraging "thinking with" and uncovering questions and gaps together, with the focus on Research as Inquiry and Scholarship as Conversation, can help lessen anxiety that might surround discussions. Second, there are power dynamics between teacher and student: both between instructor of the course and students as well as between the student serving as teacher each week and his or her peers. In a review, Darren E. Lund criticizes well-known critical pedagogy scholar Ira Shor in his model of student empowerment via perceived dissolvement of instructor control. Lund states,

> In a bold move for a university instructor, Shor seeks students' input on the reading list, assignments, seating, and evaluation. For me, this experiment raises a number of questions. How many students desired this additional role? Might any of them resent being asked to help construct a reading list for a professor they assume to be an expert in the field?[23]

This is something that was taken into account in the design of this course: How much true power should an instructor give students, and how much power is actually beneficial to their learning? Joshua Beatty provides a deeper reading of Paulo Freire and makes the distinction between Freire's intent and how first-world librarians have

read his work regarding power and authority. Beatty explains that we have conflated authority and authoritarianism. He highlights that "the teacher has authority in the classroom because they have achieved a mastery of their particular subject. And this authority manifests itself as the right and responsibility to limit the student's freedom."[24] Beatty notes how, unfortunately, in our enthusiasm for rejecting authoritarianism we tend to also reject the teacher's authority.

In this course, students have limited authority and become assigned experts for the week. By completing readings before their peers and leading discussion, they gain authority for the temporary allotment of time. This does not diminish the course instructor's authority, as this is earned expertise and helps structure student learning. We are better able to explore topics of critical pedagogy, equity, and inclusion in teaching by having this contained structure that values teacher authority. This additionally ties in to encouraging students to value their own expertise and take on leadership roles regarding information literacy in their future library environments; here we see Authority Is Constructed and Contextual, Information Has Value, and Scholarship as Conversation. Authoritarianism is subverted by examining questions together and having a class-level agreement to navigate difficult conversations.

Discussion is the main focus of the course, as noted in its seminar-style design. Direct engagement with the *Framework* is limited to a one-week deep-dive of discussion surrounding reading the *Framework* document, as well as associated readings. Students also have chosen to look more closely at the similarities and differences between the *Framework* and the *Information Literacy Competency Standards for Higher Education*, as well as teaching with big questions instead of focusing on skills. All discussions are encouraged to include reflection on previous readings, and so tie-ins are regularly made between the *Framework* and subsequent readings in the course. There are other assignments, however, that reinforce the pedagogy of the *Framework.* Students craft a teaching philosophy that they revisit and revise during the course, using course readings and their learning to craft an argument as to why they made the changes they did. Students also write a cover letter and reflect on their skills and expertise in teaching (including reflections related to the *Framework*), and the final project includes a student-compiled instruction tool kit of readings and sources related to each week's course content to help support their future engagement as educators. Students, however, are not required to focus heavily on the *Framework* in their teaching philosophies and approaches because not all will be required to be directly connected to it in future work: This course sets students up with baseline knowledge for approaches to pedagogy, and the *Framework* is included as an approach.

By incorporating the *Framework* in course design, noncompetitive learning, inquiry, and valuing information and expertise become apparent in both pedagogical approaches and content. Throughout the course, we also examine what makes a good teacher, the role of librarians as educators, image and self-perceptions, facets of successful instructional design schemas, educational technology's ability to both democratize education and also derail it through private interests, and how to work with other groups and entities in designing instruction. This historical and theoreti-

cal approach to content in the foundations course sets students up to begin applying what they've learned in subsequent coursework, such as in LIS 583.

LIS 583: ELEARNING FOR LIBRARIANS AND OTHER INFORMATION PROFESSIONALS

Once students attain the foundations of the *Framework* and learning theories, they move onto the e-learning course. This course gives students the practical skills needed to develop high-quality online multimedia learning objects. The course is focused on designing and developing stand-alone skills-based tutorials and not on teaching online via learning management systems or another similar environment. Course outcomes include the following:

- Use an instructional design model to design an effective online tutorial.
- Implement sound pedagogy and multimedia principles in tutorials.
- Describe and later implement the characteristics that lead to engagement and motivation in online tutorials.
- Create effective online assessments for tutorials.
- Examine and evaluate different multimedia tools and tutorials.
- Use a multimedia tool to develop an effective and engaging online tutorial.
- Apply usability techniques and universal design principles to improve your own tutorial.
- Review and critique several online tutorials.

Although students work extensively with the *Framework* in the foundations course, it can be difficult for them to transfer this knowledge to a practical, teaching setting. Researchers and librarians Christine Bombaro[25] and L. Wilkinson[26] have noted the *Framework*'s lack of accessibility and usefulness. Thus, the e-learning course allows students to develop readily usable teaching materials that are aligned with the *Framework*. Starting from a cognitive-processing framework where students learn how new knowledge is gained, they then examine evidence-based learning principles and how they are applied to online multimedia materials. Students explore the latest multimedia technologies, including content authoring tools, rapid e-learning tools, and video, audio, and graphic tools. Course topics include application of learning theories, graphic design principles, interactivity, gaming, and engagement. Additionally, usability, accessibility, and universal design are studied along with an understanding of the *Framework* and how it can be used in developing e-learning tutorials.

Two course assignments focus on developing teaching materials using the *Framework*. Each week students must locate, review, and evaluate online tutorials from across disciplines and skill sets, including at least two tutorials that directly address information literacy. Students are asked to share their reviews with their peers and to address how their tutorials are aligned with the *Framework*. They must specify

the frame, the knowledge practice, and the disposition to which each tutorial is aligned. They are also required to evaluate the extent to which each tutorial teaches the intended concepts addressed in the different frames. Because many tutorials were created before the *Framework* was widely adopted, they often do not focus on the threshold concepts the *Framework* emphasizes directly. Thus, with this assignment students must identify frames on their own and are able to gain a better understanding of how the *Framework* can be used to teach concepts via online tutorials.

As a final project, students are required to complete a full-length tutorial in the e-learning tool of their choice. As students design their tutorial, they must first identify a frame and corresponding knowledge practices and dispositions that they will address in their tutorial. Students are then required to write at least five learning outcomes that are aligned with the frame they have chosen. They must also discuss why they chose a particular frame and how it is aligned with the learning outcomes they wrote. Part of the grading considerations for this final project include the extent to which students have understood the *Framework* as determined by the learning outcomes they write. They are also graded on the extent to which the tutorial teaches the *Framework* and the learning outcomes they have identified.

CONCLUSION

The University of Arizona's graduate certificate in instruction and teaching for librarians and information professionals was created to meet the needs of librarians who are required to take on the role of educator in a variety of forms and settings. The certificate provides students with the skills, background, and theory needed to become effective instructors across teaching environments. The *Framework* is used throughout the certificate as both subject matter and pedagogical approach and is scaffolded between theory and practice. The *Framework*'s flexibility and focus on threshold concepts allows students to critically explore big questions within information literacy through discussions, teaching assignments, and practical application. The certificate is fully online and available to students currently enrolled in an MLS program, to those who have completed an undergraduate degree and work as paraprofessional staff in libraries, and to current librarians wanting to learn more about pedagogy and improve their own teaching. It was approved in late 2017 and was officially offered starting in 2019. The individual courses, however, have been available since 2016, and we assess student learning each semester to compile into a certificate-wide evaluation in order to expand and improve the reach of the courses and program.

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18

Rethinking the Reference and Instruction Curriculum Using the Integrated Threshold Concept Knowledge Framework

Susan Rathbun-Grubb

Previous research shows that few library and information science (LIS) programs offer or require stand-alone courses on information literacy or instructional design.[1] Instead, programs often insert an overview of these topics into introductory reference courses.[2] Recent discourse about the curriculum for LIS programs illustrates the diversity of opinion about what knowledge, skills, and dispositions are actually part of a core that all future librarians should master.[3] Reference courses have been dropped as requirements in the programs of study of some schools. Faculty in these programs who value the reference course as a core part of the curriculum recognize that just a few weeks of topical coverage of information literacy and instructional design are insufficient. It is a luxury to have additional electives to cover the topics at the depth required for a new reference and instruction professional. This leaves instructors of reference at a crossroads: How do we teach information literacy and instructional design, particularly in the context of the Association for College and Research Libraries' (ACRL) *Framework for Information Literacy for Higher Education*, in a one-semester reference course?[4] This chapter will tackle that challenge and offer a strategy for integrating the educational framework behind the *Framework*—threshold concepts—into the course design.

The chapter begins with a brief overview of threshold concepts (TCs) and the ways in which they form a foundation for the ACRL *Framework*. Next, using the approach of Integrated Threshold Concept Knowledge (ITCK), a cohesive course plan is offered that provides an environment in which students experience TCs in the context of library and information science as a discipline.[5] The chapter concludes with a list of reference course learning outcomes that align with TCs and the ACRL *Framework*, reflective activities, and assignment ideas that enable the student to experience TCs in LIS and recognize TCs in other disciplines.

THRESHOLD CONCEPTS AND THE ACRL *FRAMEWORK*

Jan Meyer and Ray Land define a TC as a "portal, opening up a new and previously inaccessible way of thinking about something. It represents a transformed way of understanding, or interpreting, or viewing something without which the learner cannot progress."[6] The learner crossing the threshold experiences a turning point where understanding and perspective within a discipline can be forever changed. For Meyer and Land, TCs are "troublesome knowledge" or ideas that are at first alien to the learner, but once grasped, become part of the core knowledge of a discipline.[7] The tacit knowledge one acquires as part of the move from novice to expert is also an example of troublesome knowledge. TCs are not only associated with cognitive change. Emphasizing the affective dimension of learning, Peter Felton describes the liminal state in which the learner negotiates threshold crossing as a place where the emotional experience of the learner is a critical component of the process.[8] This is a time when the learner develops confidence and a sense of comfort with the new knowledge.

In 2016 an ACRL task force replaced the skills-focused *Information Literacy Competency Standards for Higher Education* with a reconceptualized vision of information literacy standards—the ACRL *Framework*.[9] Instead of simply revising the previous document, the task force based the *Framework* on the notion of TCs to modernize the vision of information literacy and more closely align the standards with current educational theory and practice. The intellectual origins of this revisioning can be found in the seminal works on information literacy and TCs by Amy R. Hofer, Lori Townsend, and Korey Brunetti, which situate information literacy within the discipline of information science and provide a great deal of context for the *Framework*'s selection of TCs.[10] Townsend and colleagues assert that "the work of information literacy instructors . . . is to expose students to the threshold concepts of librarians' discipline—information science—and help students to cross them."[11] Prior to accomplishing this mission, therefore, information literacy instructors should be introduced to information science TCs in their LIS education programs.

The ACRL *Framework* TCs or frames are:

- Authority Is Constructed and Contextual
- Information Creation as a Process
- Information Has Value
- Research as Inquiry
- Scholarship as Conversation
- Searching as Strategic Exploration[12]

Each frame is contextualized and offers knowledge practices and learner dispositions as a form of learning outcomes to guide the development of teaching materials and strategies.

Several studies show that reaction to and adoption of the new *Framework* have been inconsistent.[13] While some reference and instruction librarians are readily designing and utilizing new approaches for teaching information literacy using the *Framework*, others have been slow to adopt it or do not intend to do so. Implementation has been challenging for some who find the frames ambiguous compared to the former standards. However, efforts to disseminate implementation strategies are becoming widespread. Librarians are sharing information via a *Framework* sandbox and are publishing monographs and articles about implementing the *Framework*.[14]

A criticism of the *Framework* that is relevant to preparing LIS students to use it in their future instructional roles is that ideas about metacognition are downplayed in the final *Framework* draft. For example, Diane M. Fulkerson and colleagues state that "missing from the document is any connection between the content outlined by threshold concepts with metaliteracy and metacognition. Many dispositions in the final document require learner self-awareness, critical reflection, and engagement in other activities that promote metacognitive thinking in order to be information literate, but that is not stated clearly."[15]

Despite the criticisms of the *Framework*, librarians are adopting and implementing it effectively nationwide. Library managers and directors expect new instruction librarians to understand it and to translate it to improve student learning and information literacy. It is incumbent upon LIS educators, along with experienced professional librarians, to help future librarians comprehend the *Framework* and be able to reflectively incorporate it into their instructional design.

EDUCATION FOR REFERENCE AND INSTRUCTION

Most LIS students receive very little preparation for instructional roles during their programs because educational theories and instructional design are generally absent from the required curriculum.[16] This deficiency puts added pressure on the new librarian's manager and colleagues to help bridge the knowledge and skills gap. Suggested approaches to bringing a new instruction librarian up to speed include collaborative course design, mentorship, free online education coursework, and engagement with education and instruction librarian blogs and popular educational psychology books.[17] Regardless of the method, the onus is on new librarians to seek out remedial means to perform effectively on the job.

An additional problem is the variation of information literacy levels among new LIS students. LIS educators recognize that not all students come to a master's program with the requisite information literacy skills, and these students face many of the same challenges they will eventually be helping others to master.[18] Given the recent and uneven adoption of the *Framework*, many incoming students will not have experienced undergraduate information literacy training based on it.

The reference course is a starting point for equipping students for their professional roles in information literacy and instructional design. This course may also

be their first formal introduction to information literacy standards of any kind. This venue is the right place for instructors to introduce the foundational concepts to students, while at the same time giving them tools to instruct others. Introducing information literacy concepts as TCs combined with metacognitive techniques will give students a deeper understanding of information literacy, the *Framework*, and the TCs of the LIS discipline.

INTEGRATED THRESHOLD CONCEPT KNOWLEDGE

Integrated Threshold Concept Knowledge can guide the design of the reference and instruction course. Julie A. Timmermans and Jan H. F. Meyer's work on ITCK stems from the desire to make the idea of threshold concepts "actionable" by educators in the classroom. They describe this process as "one that begins with identifying TCs and moves through creating and embedding contextually relevant and empirically grounded teaching and learning strategies that support TC learning."[19] The ITCK framework is learning centered and transformative, and it encourages reflective practice, communication, and a valuing of differences among learners' experiences. The framework also recognizes emotion and motivation as core components of the learning process and requires a "cultivation of care" on the part of the teacher.

Establishing TCs is often accomplished by experts in a discipline; however, educators who work with students to establish TCs may find the results to be more productive and accurate because experts have difficulty remembering the troublesome knowledge they dealt with as novices.[20] Using the language of ITCK, students can more readily describe the points at which they felt stuck and what was required to move them into a place of being unstuck.

Land defines the ITCK framework as a "pedagogy of uncertainty [that] cannot dispel anxiety, but seek[s] to provide students with perspectives that will enable them to live with anxiety." He contrasts this pedagogy with "consumer models of learning [that] imply acquisition and accumulation."[21] Further, ITCK goes beyond educators simply determining what the threshold concepts are in a discipline, but also facilitates learner transformation by "identifying, through dialogue with students, how their students construct knowledge."[22]

RECONSTRUCTING THE REFERENCE AND INSTRUCTION COURSE WITH ITCK

The ITCK approach requires the establishment of TCs related to LIS and the subdiscipline of reference and instruction, and it depends on the creation of an environment where learners can construct meaning that will transform their understanding. With TCs or the *Frames* embedded into the structure of the course, students learn about the *Framework* by working through it and by confronting

TCs as an educational theory. Students should leave the course with improved information literacy skills and knowledge as well as a basic grounding in educational theory and practice.

The reference course is an advanced information literacy course—one that expands and builds on fundamental knowledge and skills. As instructors help learners increase their levels of information literacy, learners begin to realize that building the expertise required to teach others is a continuous process. Although the *Framework* is intended for higher education, its contents and structure are applicable to other environments and are beneficial to students who intend to work in school, public, or special libraries or in archival settings. This is an opportunity to broaden the scope of information literacy instruction by introducing the standards for these other environments, such as the American Association of School Librarians (AASL) *Standards Framework for Learners* and the Institute of Museum and Library Services (IMLS) *21st Century Skills*.[23]

Reference Course Learning Outcomes

By the end of the reference course students will be able to:

- discuss the role of threshold concepts in a discipline-based learning process;
- explain the role of information professionals in education and promotion of information literacy;
- describe the cycle of information creation and transfer;
- demonstrate an understanding of information-seeking behaviors and problem-solving processes;
- describe the basic structure of information resources and reference tools and evaluate their quality, accessibility, and appropriateness for purchase and for use;
- demonstrate ability to determine user information needs and effective use of information resources and information searching skills to meet those needs face-to-face and online;
- select appropriate teaching methods to meet instructional goals;
- discuss the ethical issues related to information policy, including confidentiality, privacy, copyright, and access;
- explain theories and practices that support the provision and management of customer-centered reference and information services to diverse user populations; and
- describe how to promote and evaluate information services.

Course Modules

The course is organized into nine topical modules centered on key questions. The TCs or frames of the *Framework* are embedded into three of the modules and provide a structure to guide discussion and activities. The other modules surround those

central ones and integrate the TC framework into the course content. Each module is briefly described below, and sample readings are referenced.

Module 1: What is a threshold concept? What are threshold concepts in the discipline of LIS?

Students learn about the threshold concept and are encouraged to think about their learning process in the course and their LIS program generally. Students explore and suggest TCs for LIS. Readings include Meyer and Land's foundational work on TCs.[24]

Module 2: What is information literacy? What are the threshold concepts that should guide reference and information literacy instruction?

Students create their own definitions of information literacy. The module introduces them to information literacy standards generally and the ACRL *Framework* in particular. The standards created by AASL and IMLS are presented for comparison. Students define and describe the role of the reference and instruction librarian in information literacy and focus on the skills in which librarians should have expertise. Readings cover information literacy and TCs.[25]

Module 3: What does the reference services environment encompass?

Students learn about two frames from the perspective of the library user and the librarian—Information Has Value and Scholarship as Conversation. Students learn that the reference environment encompasses research consultation, selection of resources, reader's advisory, programming, instruction, outreach to and collaboration with other professionals, and ethical issues. This module emphasizes the transactional environment of reference services and the use of information products to advance scholarly communication and the information life cycle. Students learn about information resources as commodities and how "socioeconomic interests influence information production and dissemination."[26] The instructor introduces concepts such as open access, licensing, fair use, and information poverty through selected seminal readings from historical and current perspectives.[27]

Module 4: What are the various types and disciplinary categories of reference resources? How do I select resources for purchase and use?

Students learn about two frames from the perspective of the library user and the librarian—Information Creation as a Process and Authority Is Constructed and Contextual. Students engage with a variety of resource types and formats and learn the criteria for selecting resources for research use or purchase; instructors emphasize resource production and process. Students learn about differences in information needs and resources across subject disciplines and contexts. This module emphasizes the notion of authority as "constructed" and subject to evaluation based on the information need. Students learn about credible sources for reviewing reference tools. Suggested readings include relevant chapters from a reference textbook.[28]

Module 5: How do I solve reference problems and connect users to relevant sources that match their information needs?

Students learn about two frames from the perspective of the library user and the librarian—Research as Inquiry and Searching as Strategic Exploration. This module focuses on problem solving in the context of reference transactions, regardless of type, and focuses on skill building in the areas of the reference interview, conceptualization of queries, matching sources to queries, and advanced search strategies. Suggested readings include relevant chapters from a reference textbook to support hands-on searching and reference interview exercises.

Module 6: How do I create instructional sessions on information literacy? What are sound instructional strategies?

Students reflect on the frames and incorporate them into basic instructional sessions. The instructor introduces a new standard: ACRL's *Roles and Strengths of Teaching Librarians*.[29] Students learn how to design learning outcomes as well as how to design learning sessions for diverse learners based on foundational instructional design methods (such as the ADDIE—analysis, design, development, implementation, and evaluation—model).[30] Instructors emphasize the liaison role of reference librarians, such as collaboration with instructors, community partners, or other professionals. Readings cover information literacy instructional methods and case studies of one-shot and multisession instructional interventions.[31]

Module 7: How do I evaluate reference and instructional services?

This module focuses on service evaluation and assessment. Students learn how to identify performance measures, how to use standard measures like the READ Scale and LibQual+ to evaluate services, and how to assess student achievement. Students learn about basic data collection and analysis tools, and readings cover assessment and evaluation.[32] Students reflect on and identify TCs for the module content.

Module 8: How do I promote my programs and services? What does a reference services manager need to know?

Students learn about formal promotion and marketing strategies that they can use to attract people in their communities to use library services, attend programs, and access resources. The instructor introduces students to the strategic planning, leadership, management, and supervisory roles found in reference services. Suggested readings include relevant chapters from a reference textbook. Students reflect on and identify TCs for the module content.

Module 9: What have I learned in this course? What does it all mean?

Students reflect upon the frames and the learning outcomes of the course, assessing their strengths and weaknesses in reference and instruction. Students construct a professional development plan to build on their new skills and prepare them for the job market.

Course Activities and Assessments

A key to success is the provision of metacognitive activities throughout the course. The instructor can select from the following sample of metacognitive activities adapted from those found at the Vancouver Island University Centre for Innovation and Excellence in Learning and similar institutes for teaching and learning.[33] Each can be completed individually by students or through small group projects and discussions.

- Preassessment before course begins: What do you already know about reference and instruction that will help you in the class?
- Pre-course reflection: What is your definition of information literacy?
- Reflection: Thinking about your time in the LIS program so far, what is one idea or tenet of the profession that you had difficulty comprehending? What is one idea that made you change how you think about the profession or your future in it?
- Module reflections:
  - What do you think are the three crucial points of this module?
  - What ideas do you find most challenging so far?
  - What ideas are most surprising to you?
  - Which parts of the module content make you uncomfortable or anxious?
- Frame/TC reflections:
  - Select a frame
    - What would it look like to apply the frame to a public, school, or special library setting?
    - How would you try to teach someone this frame?
    - Assess your level of mastery of this frame.
    - How would you revise this frame?
    - Create a concept or mind map of this frame.
    - Draw your experience of learning this frame.[34]
  - Select a discipline and research what its TCs are. Discuss whether you agree/disagree with the selected TCs.
- Assignments:
  - Create a lesson plan for a subject-based workshop on one of the knowledge or disposition areas of a frame.
  - Create a LibGuide that promotes information literacy for a specific course.
- Post-course reflection:
  - What is your definition of information literacy? How has your definition changed since the beginning of the course?
  - In what areas of reference and instruction are you still feeling a bit stuck?
  - In what ways has the course impacted how you think about the discipline of LIS?

Engaging in dialogue with students to get feedback on their experience of the course will be critical to its evaluation and the development of improvements to course design and delivery.

According to the TEAL Center,

> Constructing understanding requires both cognitive and metacognitive elements. Learners "construct knowledge" using cognitive strategies, and they guide, regulate, and evaluate their learning using metacognitive strategies. It is through this "thinking about thinking," this use of metacognitive strategies, that real learning occurs. As students become more skilled at using metacognitive strategies, they gain confidence and become more independent as learners.[35]

Metacognitive reflections on the *Framework* are fundamental to students' and teachers' understanding.[36] Professional librarian Ethan Pullman notes that his reflective practice using the *Framework* allowed him to "think about knowledge practices and dispositions from a nonexpert perspective," thereby making him a more effective teacher.[37]

A student will complete the course having learned about the practice of reference services from the standpoint of information literacy and instructional design as foundational constructs underlying effective public service, rather than as just types of service. The instructor who is new to TCs or metacognitive approaches will have rich food for thought to incorporate into the next iteration of the class or other LIS courses. This course design responds to calls in the literature to create opportunities for deeper reflection and use of TC theory in LIS education.[38] The goal of the course is the promotion of "reflective praxis" that lives beyond the classroom experience to impact the professional's work on a day-to-day basis.[39]

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* * *

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Mary Beth Burgoyne is library faculty at Chandler-Gilbert Community College and serves as the learning communities and assessment lead for the department. She has taught information literacy as well as library information technician courses in a certificate and degree program, in a variety of environments, including online, hybrid, face-to-face, and learning communities. Her recent research interests include reflective practice, information literacy instruction, and assessment. She holds degrees in history and library science.

Gina Calia-Lotz has worked as the instructional services librarian at Harford Community College since 2011. In addition to her role as coordinator of the library's instructional services and resources, she also serves as co-interim director of the library, as cochair of the college's General Education Committee, and as chair of the

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Keren Dali, PhD, is assistant professor at the Department of Research Methods and Information Science at the University of Denver. She is a double graduate of the University of Toronto and holds certificates in diversity & inclusion and project management from Cornell University. Her primary research interests are community engagement in libraries, diversity and inclusion at the workplace, relationships between library and information science (LIS) and social work, disabilities, LIS education with the focus on humanistic pedagogies, and reading practices of adults. Keren is the recipient of multiple awards for her work.

Kelly Diamond is the head of the West Virginia University Libraries' Office of Curriculum and Instruction. She has an MA in English language and literature from West Virginia University, an MLIS from the University of South Carolina, and a graduate certificate in instructional design from George Washington University. Diamond works on developing and creating instruction and assessments, ranging from one-shots to credit-bearing courses, as well as providing support for teaching librarians. Her office also creates and maintains online and digital learning objects.

Elizabeth Dobbins is the reference and online instruction librarian at Campbell University. She received her BA in religious studies and international studies at Elon University and her MLIS at the University of Illinois Urbana–Champaign. She entered the profession in the midst of rich discussions about the *Framework*; one of her first professional activities was collaborating with her colleagues to leverage the *Framework* as an opportunity to market the library instruction program. Elizabeth received the Dean's Award for Teaching Excellence in spring 2017, in her first year as a professional librarian. As a distance learning librarian, she serves undergraduate students at four extended campuses and the Campbell Online program and is an active participant of the NCLA Distance Learning Section, serving as secretary.

Ron Epps is an Eagle Scout and has a BA in history from Virginia Tech and an MSLS from the University of North Carolina. He is the print resources and reference librarian at Campbell University's Wiggins Memorial Library. Ron manages print resource acquisitions and donations at the library. He has assisted with many library events and organizes the fall street fair booth for the library. His research interests include how technology can assist librarians with workflows.

Melissa Harden is the first year experience librarian at University of Notre Dame, where she focuses on connecting first-year students to the resources and services available at the Hesburgh Libraries. Specifically, Melissa develops learner-centered information literacy sessions for students in writing and rhetoric classes and other courses for first-year students.

Holly Hendrigan is the librarian for the Faculty of Applied Sciences at Simon Fraser University (SFU). She holds an MLS from the School of Library and Archival Studies at the University of British Columbia (UBC) and a BA (Hons) in English literature also from UBC. She has held public service positions at the Vancouver Public Library and the British Columbia Institute of Technology. She is the principal investigator of the TechBC Memory Project, a digital collection of thirty oral history interviews that investigates the history of SFU Surrey. In addition to her research on teaching the *Framework*, she is also interested in the intersection of digital humanities and academic librarianship practice. She has published articles in *Historical Studies in Education*, *British Columbia History*, and *Issues in Science and Technology Librarianship*.

Paulette A. Kerr is campus librarian at the University of the West Indies (UWI) Mona, in Jamaica. Prior to her appointment in 2015, she was head of the Department of Library and Information Studies at UWI. She joined the department in 2010 after pursuing a PhD at the School of Information and Communication, Rutgers University. Her dissertation, entitled "Conceptions and Practice of Information Literacy in Academic Libraries: Espoused Theories and Theories-in-Use," explored teaching and learning in information literacy in academic libraries. She has

championed the cause of information literacy education especially in academic institutions and has published and presented on various aspects.

Jessica C. Lewis is the head of West Indies and special collections in the University of the West Indies (UWI) Mona Library and the former coordinator of the Mona Information Literacy Unit at UWI Mona. Jessica is an information literacy advocate and is now focusing on information literacy and the use of primary materials.

Thomas P. Mackey, PhD, is professor in the Department of Arts and Media, Division of Arts and Humanities at SUNY Empire State College. He teaches courses in Information Design, History and Theory of New Media, Digital Storytelling, Social and Community Informatics, and Empowering Yourself in a Post-Truth World. His research examines metaliteracy, a model he originated with Trudi E. Jacobson, as an empowering pedagogical framework for reflective teaching and learning. Tom authored the framing chapter "Empowering Metaliterate Learners for the Post-Truth World" for their third metaliteracy book, entitled *Metaliterate Learning for the Post-Truth World* (2019).

Amy Mars is the research, instruction, and outreach librarian at St. Catherine University, where she works primarily with the humanities departments and core curriculum, coordinating information literacy instruction and leading outreach initiatives such as the One Read for Racial Justice, for which she won the Minnesota Library Association's 2017 Academic Innovators Award. She is a former cochair of the Minnesota Library Association's Instruction Round Table. With Trent Brager and Kim Pittman, Amy helped develop 23 Framework Things, an online professional development program that was recognized with the 2018 ACRL Instruction Section Innovation Award.

Bharat Mehra, PhD, joined the School of Library and Information Studies at the University of Alabama as professor and EBSCO Endowed Chair in Social Justice in January 2019. He was formerly a faculty member in the School of Information Sciences at the University of Tennessee. His research focuses on diversity and social justice in library and information science and community informatics to empower minority and underserved populations. He has collaborated with racial/ethnic groups, international diaspora, sexual minorities, rural communities, low-income families, small businesses, and others, to represent their experiences and perspectives in the design of community-based information systems and services.

Yvonne Mery, associate librarian at the University of Arizona Libraries, is part of the Research and Learning Department, where she serves as an instructional design librarian. Yvonne has designed and implemented online courses in information literacy skills for undergraduate students and collaborated with departments across campus to support students and instructors in their research needs. She has coau-

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Liza Oldham currently serves as a research and instructional design librarian at Phillips Academy in Andover, Massachusetts. She earned an MLIS from Pratt Institute and a BA in art history from Southern Methodist University. Her teaching and research interests include culture and media studies, information literacy, and pedagogical design.

Nicole Pagowsky is associate librarian and instruction coordinator at the University of Arizona Libraries. She holds a second master's in instructional design and educational technology with a specific interest in applying critical pedagogy practices to instructional design. She is coeditor of the two-volume set *The Critical Library Pedagogy Handbooks*, which received the ACRL Ilene F. Rockman Publication of the Year Award in 2017. Nicole also coedited *The Librarian Stereotype: Perceptions and Presentations of Information Work* (2014). She has been an invited instructor for ALA's Instructional Design Essentials e-course, and currently teaches the course she designed on Information Literacy Pedagogy (LIS 581) for the University of Arizona School of Information.

Kim Pittman is the information literacy and assessment librarian at the University of Minnesota Duluth, where she coordinates the library's instruction program, leads assessment efforts, and teaches a first-year seminar course. She is a cofounder of

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Susan Rathbun-Grubb, MSLS, PhD, is an associate professor at the School of Library and Information Science at the University of South Carolina. Her research centers on the intersection of education, training, and careers in library and information science. She is particularly interested in career progression across the life course, job satisfaction, and the evaluation of pedagogical strategies in LIS education. Her teaching areas are technical services, metadata, and reference services. She has contributed to the development of competencies documents for cataloging, metadata, and acquisitions professionals adopted by American Library Association. She has worked in academic, public, and school libraries, as well as the health information technology industry.

Peter J. Rich, PhD, is an associate professor of instructional psychology and technology at Brigham Young University. He researches computational thinking in K–8, teaching young children and their teachers how to code computers and robots. Peter also teaches courses on the design, development, and psychology of learning and instruction.

Leslie Ross graduated summa cum laude from the University of Akron with a BA in history and French, then went on to earn an MA in library and information science from the University of Iowa and a master of organizational leadership from St. Ambrose University. She joined the Reference Department at the St. Ambrose University Library in 2005. In addition to her duties as a reference and instruction librarian, she coordinates the information literacy program and conducts educational research.

Sarah Steele, associate dean of the library and head of research and instruction services at Campbell University, earned her BA in anthropology and her MLS in school and academic librarianship. She is currently pursuing an MA in Christian ministry at Campbell University. With the support of colleagues, Sarah established the Wiggins Memorial Library Academic Symposium in 2011, an annual event held annually for the Campbell community to foster engagement with student research and creative works from across the university. Sarah was awarded the library's first Dean's Award for Teaching Excellence in spring 2014. She has led her instruction team's engagement with the *Framework* and has cofacilitated campus workshops for faculty on how they might partner with a librarian to develop *Framework* knowledge practices and dispositions in their students.

Carla Stoffle (MSLS, University of Kentucky, 1969) has published three books and more than sixty articles and book chapters and has given more than 130 presentations at professional meetings on administration of academic libraries, managing organizational change, budgeting, library instruction, government documents, collections and collections costs, assessment, and diversity. Her awards include ALA's Dewey Medal, Lippincott Award, Equality Award, Elizabeth Futas Award, Academic Research Librarian of the Year, Miriam Dudley Bibliographic Instruction Librarian of the Year, and Arizona Librarian of the Year. She served as dean of the University of Arizona Libraries from 1991 to 2013 and as a professor in the iSchool at the University of Arizona.

Brooke Taxakis is reference and instruction librarian and head of outreach at Campbell University. She earned her BS in marine science from Coastal Carolina University and her MLIS from the University of South Carolina. Brooke was a collaborator on the article "Research Consultation Effectiveness for Freshman and Senior Undergraduate Students," published in *Reference Services Review* (2014). As the head of the Outreach Committee, Brooke has led the creation of several events such as Game Night, Trivia Night, Lightning Talks, Crafts with Books, along with collaborative events with Student Success and other units on campus. Brooke was awarded the library's Dean's Award for Teaching Excellence in spring 2016.

Alyssa Wright is the associate librarian for the social sciences at West Virginia University. She has an MA in communication studies and an MLIS from the University of Iowa. Her work centers on improving students' critical thinking and research skills as well as collaborating with faculty to craft assignments and lesson plans that address students' information literacy deficits. She teaches courses in information literacy and grant seeking. Her previous teaching experience includes courses in communication, writing, rhetoric, and public speaking at the university and community college level. She serves as the library liaison to psychology, communication studies, and sociology and anthropology.