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Academic Librarian Competencies for Online Library Instruction:

A Competency-Based Needs Assessment

by

Rebeca Peacock

A dissertation

submitted in partial fulfillment

of the requirements for the degree of

Doctor of Education in the Department of

School Psychology and Educational Leadership

Idaho State University

Spring 2022

To the Graduate Faculty:

The members of the committee appointed to examine the dissertation of REBECA PEACOCK find it satisfactory and recommend that it be accepted.

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RE: Study Number IRB-FY2021-272: Academic Librarian Competencies for Online Library Instruction: A Competency-Based Needs Assessment

Dear Ms. Peacock:

Thank you for your responses to a previous review of the study listed above. I agree that this study qualifies as exempt from review under the following guideline: Category 2.(i). Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording).
The information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects.
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Sincerely,

Ralph Baergen, PhD, MPH, CIP
Human Subjects Chair

DEDICATION

I dedicate this to Dr. David Befus, Dr. Constance Befus, and Dr. Mark Peacock. Thank you for believing in and supporting me when I was not sure I could accomplish all my goals.

And to Dr. John Curry. I do not think there are words to express how much your mentorship has meant to me. I am glad God threw us together.

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Dissertation Abstract – Idaho State University (2022)

The COVID-19 pandemic required library instruction to move into online environments. However, many academic librarians lacked basic competencies to provide online library instruction. This research used a competency-based needs assessment to identify competencies academic librarians need to be successful in providing online library instruction. In addition, barriers that may make it difficult for academic librarians to provide this instruction were identified. To identify competencies, 18 experts in library instruction were interviewed. Interview transcripts were coded using in vivo coding, axial coding, and codeweaving using nVivo software to derive 24 competencies that were validated by the experts. Experts also identified 7 barriers that may make it difficult for academic librarians to successfully adopt these competencies and provide online library instruction. Findings show that while academic librarians are required to provide a variety of library instruction, including online instruction, the master's programs that supposedly prepare academic librarians do not, in fact, adequately prepare them to provide the instruction needed today. Academic librarians also have many demands on their time and may not be able to learn or perform at the level of competencies needed. This may mean that competencies are shared among various staff in an organization, rather than individuals needing to meet all 24 competencies. Overall, this research provides a method for academic librarians to identify gaps in their knowledge, skills, and attitudes in providing online library instruction to work toward building competencies to improve online learning.

Keywords: academic librarians, online instruction, library and information science, competency-based needs assessment, online learning competencies, professional development

Chapter I: Introduction

Introduction

The role of the academic librarian has evolved over the past few decades from that of a curator of information to a teacher of information literacy skills (Cox & Corrall, 2013; la Plante, 2013). Librarians provide lectures and hands-on instruction that help students and faculty develop skills in research strategies, critical thinking, and interpretation of information across all academic disciplines. However, not all librarians have been trained to be teachers (Walter, 2006), as many library and information science programs offer limited options for gaining instruction skills (Ducas et al., 2020; Julien et al., 2018; Saunders, 2015; Shonrock & Mulder; 1993; Sproles et al., 2008; Westbrock & Fabrian, 2010), and lack options, in particular, to develop online teaching skills. Academic librarians' teacher identity has mainly been developed through self-study and on the job training (Ducas et al., 2020; Shonrock & Mulder; 1993; Westbrock & Fabrian, 2010). Therefore, teaching skills and abilities, whether in-person or online, tend to have been acquired through informal means with an inconsistent performance thus resulting across the profession.

As the recent COVID-19 pandemic demonstrated across academia, not all university faculty are prepared to teach in formats other than traditional face-to-face (Brooks & Grajek, 2020). Said faculty may lack basic competency in non-face-to-face instruction, where *competency* can be defined as *knowledge* (e.g "instructional design theory"), *skills* (e.g. "using technology to create learning"), and *attitudes* (e.g "a growth mindset") necessary to perform a job (Gupta et al., 2001; McLagan, 1980) This lack of competency was true of librarians as well. In recent years, more libraries have hired "instructional design librarians" and "eLearning

librarians" to advise librarians on teaching and learning techniques, on developing curriculum, and to serve as course material developers (Withorn & Willenborg, 2020). Most academic libraries offer asynchronous video instruction on basic information literacy skills while others might include online tutorials or microcourses (Baer; 2021; Befus & Byrne, 2011; George & Martin, 2004; Greer, 2016; Julien et al., 2018; Lo & Dale, 2009; Moran, & Mulvihill, 2017; Stiwinter, 2013; Wray & Mulvihill, 2018; York & Vance, 2009). A few academic libraries have developed online courses such as the first-year student microcredential and microcourses (Moran & Mulvihill, 2017; Stark & Peacock, 2019). However, many libraries rely on their instructional design experts or individual librarians' self-taught knowledge rather than expecting all librarians to meet a base level competency in online teaching and learning (Withorn & Willenborg, 2020).

This lack of base level competency in providing online instruction, coupled with a sentiment outside of the field of instructional design and technology that online learning does not deliver the same quality of instruction (June, 2020; Newton, 2019), has led to mixed perceptions of the quality of online learning by faculty. Higher education literature regularly examines faculty perceptions regarding online learning in addition to their readiness to teach online (Chiasson et al., 2015; Myers et al., 2004; Tanner et al., 2019; Wang et al., 2003; Wingo et al., 2017). Similarly, the library science literature frequently seeks to determine perceptions of library online learning but from the student perspective rather than that of faculty (Befus & Byrne, 2011; Hess, 2014; Silk et al., 2015; Weightman, 2017). However, the Library Science literature has a large gap in that the focus is on face-to-face instruction with little about online library instruction (Bryan et al., 2018).

Statement of the Problem

Academic librarians, like other faculty in higher education, do not receive a pragmatic set of courses in their degrees designed to help them learn how to become teachers (Bewick & Corrall, 2010; Houtman, 2010; Shank & Dewald, 2012; Westbrock & Fabian, 2010). As in many graduate programs, Library Science core curriculum focuses on information seeking behavior, organization of information, and designing specific types of services for users. While curricula on how to teach may be found in the Library Science curriculum, these courses are often electives (Bailey, E. C., 2010; Ducas et al., 2020; Julien, 2018; Saunders, 2015; Shonrock & Mulder; 1993; Sproles et al., 2008; Westbrock & Fabrian, 2010). This state of affairs does not adequately prepare future academic librarians for the rigorous responsibilities required of practitioners in our current era (Stoffle et al., 2020).

In the 1980s, the Association of College and Research Libraries adopted a set of instruction competencies for academic librarians that were evaluated in several studies (Mandernack, 1986; Powell & Creth, 1986, Shonrock & Mulder, 1993). In 2007, a new set of competencies was adopted by the Association of College and Research Libraries (ACRL Instruction Section Proficiencies for Instruction Librarians Task Force, 2007). Shank and Bell (2011) articulated concerns about these competencies in the field. They thought that, to keep pace with the transformation in higher education course delivery, academic librarians needed to fulfill the role of a *blended librarian*, which is one who works in a face-to-face space as well as online. They believed the competencies presented, although important, addressed traditional instruction competencies but not necessarily the technological needs of the modern librarian who can work in multiple instructional spaces. A further update was adopted by the Association of

College and Research Libraries in 2017, however, the goal stated by this new document was to provide broad and flexible recommendations rather than adopting competencies or proficiencies.

During the COVID-19 pandemic most institutions of higher education experienced some type of face-to-face instruction restrictions, whether this was to limit class sizes or to require courses to meet only via video conferencing software (Hodges et al., 2020). Academic librarians had to adapt their instruction modalities just as other non-library faculty had to. However, academic librarians do not provide the same type of instruction as traditional faculty and therefore often do not have access to the same resources and support structures. This caused a flurry of questions on Library Science LISTSERVS as many librarians asked how others were going to provide online instruction (Benjes-Small, 2020; Keller, 2020; Paul, 2020; Pierce, 2020). Would faculty be using video recorded lectures of database searching? Would they make asynchronous tutorials or courses served to students via a Learning Management System (LMS)? Or would they try to recreate their instruction synchronously and deliver it in real time to students online? As these questions grew, it became clear that there was a lack of readiness in academic librarians to meet the challenges of providing quality online instruction to students.

This research study creates a competency model that identifies the required knowledge, skills, and attitudes necessary to perform the functions of academic librarian online teaching. In addition, this study provides a gap analysis of the current state of the field, thereby identifying the deficiencies and barriers academic librarians face.

Purpose of the Study

The purpose of this research study is to define the competencies academic librarians need to provide online instruction and to identify gaps that would make it difficult for academic librarians to provide this instruction in academic libraries in the United States. To accomplish

this goal, a competency-based needs assessment was used to define competencies and assess barriers. The research questions for this study are the following:

1. What knowledge, skills, and attitudes are needed for academic librarians to be successful in providing effective online library instruction?
2. What barriers currently exist that might prevent academic librarians from being successful in providing effective online library instruction?

Significance of the Study

In the 1980s there were several research studies conducted to ascertain the skills librarians needed in order to complete the job-specific tasks related to teaching as well as evaluate the 1985 Association of College and Research Libraries Bibliographic Instruction Section's proficiencies for bibliographic instruction librarians (Mandernack, 1986; Powell & Creth,1986, Shonrock & Mulder, 1993). Westbrock (2010) used Shonrock and Mulder's (1993) methodology to evaluate whether new competencies from ACRL Instruction Section Proficiencies for Instruction Librarians Task Force (2007) were 1) useful to academic librarians, and 2) supported either in degree programs or through individual professional development study. Shank (2006) found the original competencies had not translated well into the modern field of Library Science. In addition he found that the new competencies lacked the coverage of the skills needed to perform blended librarianship (Shank & Bell, 2011), as today's academic librarian needs a multitude of skills including those to create online tutorials, instructional videos, and other materials that can be used in a campus LMS. Armstrong (2019) reviewed the newest iteration of recommendations for instruction librarians from the Association of College and Research Libraries (American Library Association, 2017), however, there have been no

studies done to show these recommendations being used to evaluate teaching practices in either face-to-face or online instruction.

This study is an intersection between the work done in the 1980s and contemporary criticism, specifically, that provided by Shank and Bell (2011) in their advocacy for the role that blended librarianship plays in the profession. The study bridges this gap by providing a set of core competencies for academic librarians specifically for online library instruction. In addition, it is an analysis of the current state of the profession's ability to meet these competencies with the current workforce. The insights from this study can then be used by library professional associations, library schools, and academic libraries to bridge the barriers academic librarians face in providing online instruction. This research also provides insight into how current knowledge, skills, and attitudes can be supplemented with professional development opportunities to increase the ability of academic librarians to serve online populations.

Chapter II: Literature Review

During the COVID-19 pandemic, university faculty across the United States were under-prepared to provide instruction through online modalities (Brooks & Grajek, 2020). In fact, across the country there was even confusion about what constituted quality online education and what was emergency remote teaching. As Hodges et al. (2020) reflect, the principles, strategies, and definitions in the subdiscipline of online learning is familiar to professionals in the instructional and educational design fields. However, other faculty and practitioners are not as familiar with those issues. Further, there is a perception that online education is of lower quality than traditional instruction done face-to-face (Hodges et al., 2020, June, 2020; Newton, 2019). This idea is often perpetuated by those who do not have the education or experience necessary for making such a determination. Indeed, much of the research done on online teaching and learning is geared at looking into perceptions: asking questions such as, what are the students' perceptions of their online experience, or what are the faculty's perceptions of teaching an online class, with some examination of preparedness to teach online (Chiasson et al., 2015; Myers et al., 2004; Tanner et al., 2019; Wang et al., 2003; Wingo et al., 2017). In the field of Library Science, there is a focus on evaluating online instruction based on student assessment and perceptions (Befus & Byrne, 2011; Beile & Boote, 2004; Greer et al., 2016; Hess, 2014; Johnson et al., 2000; Peacock et al., 2020; Salisbury & Ellis, 2003; Silk et al., 2015). However, there is little research on evaluating the academic librarian's ability to effectively deliver the instruction.

Academic Librarians

The role of the academic librarian has changed over time. It was not until the 19th century that the modern academic librarian role truly became a profession (Peacock & Wurm, 2013). Rubin (2017) noted that Melvil Dewey's original concept of the librarian's role was to advise

apprentices and help them find readings or areas of study with practitioners passing down the skills to one another. To that end, Butler (1951) remarked on the profession as one grounded in the empirical versus the theoretical when approaching problems, viewing the profession as less academic than a profession such as medicine or law. However, by the late 19th century, a handful of schools dedicated to the study of librarianship had opened (Rubins, 2017) to welcome new librarians to the profession. The formal library degree can be viewed as a socialization process that unifies a culture for the profession (Holley, 2016). While the number of formal accredited programs has varied over the years (Peacock & Wurm, 2013), the current number of accredited programs in North America is 64 (American Library Association, 2021), producing both practitioners and researchers through master's and doctoral programs.

The role of an academic librarian has gone through transitions. Butler, in 1951, remarked that the motivation of the profession was seen as the "promotion of wisdom" (p. 246) and the imparting of information that is "not included in the formal education curriculum" (p. 246). Much later, in 2007, Luthmann lamented the stereotype of the librarian as an old woman with glasses and hair in a bun or even Batgirl's alter ego, Barbara, shelving books. Butler's (1951) and Luthmann's (2007) dichotomous images of librarians are both still prevalent in a society where academic librarians continue to wrestle with their purpose and role. The transitions academic librarians have faced are not merely a product of a formal education. Rather, the transitions in the role of librarians have been necessitated by changing social systems, changing technology and changes in higher education, all of which have forced librarians to constantly evaluate and evolve (Danner, 1998; Rice-Lively & Racine, 1997).

The increase in information that has become available through technological means is one of the primary changes that has prompted evolution in the academic librarian role at the end

of the 20th century. Rice-Lively and Racine (1997) remarked that there has been a shift in mentality from “place to the user” (p. 33) and a shift in function away from “keeper of the books to . . . network navigator” (p. 33). One way to view this change is by investigating job advertisements in the profession. Reser and Schuneman (1992) found in a review of job descriptions that reference librarians were the most posted position followed by catalogers. By 1996 these positions were still popular but had dropped in quantity with new positions being added such as “electronic services” (Beile & Adams, 2000) and by 2012, these “electronic services” positions had eclipsed some traditional positions (Tewell, 2012). Triumph and Beile (2015) also noted an increase in computer skills as a requirement of academic library positions as compared to previous studies (Belie & Adams, 2000; Reser & Schuneman, 1992). In Peacock and Wurm’s (2013) book on academic library roles, new positions in social media, instruction, scholarly communications, data management, and web design had emerged. Julien et al. (2018) found that 49% of respondents had some permutation of “instruction” in their job title and 63% of respondents had a primary role of instruction in their reference librarian positions, revealing an increasing emphasis on instruction. Instruction, as a function of librarianship, has indeed grown over the past three decades (Ducas et al., 2020) emphasizing the academic librarian's roles as a guide and teacher to students, helping them learn to think “critically and reflectively” (Rice-Lively & Racine, 1997, p. 36) rather than merely locating information for users. Baer (2021) found that 82% of librarians reported that their roles in instruction had changed over time. Both Ducas et al. (2020) and Baer (2021) found 38% of survey respondents reported their instruction roles involved some aspect of online learning. The evolution of the academic librarian role shows that library instruction has become a more prominent aspect of the job.

Library Instruction

As the role of the academic librarian has evolved, so has library instruction and how it is done. It is no longer enough to teach students how to use the library, rather students must also learn how to be connected to the complex information world, in all of its forms, beyond the walls of the campus library (Ducas et al., 2020). *Information literacy* is the catch-all phrase that many librarians use to define this all-encompassing set of skills. It can be defined as "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" (American College & Research Libraries, 2016). However, there is growing popularity in the use of terms such as *critical inquiry* to define these skills more broadly and to show the linkage between the more traditionally taught library skills and those that disciplinary librarians have also taught in their content areas. *Critical inquiry,* used in this context, is the "process of gathering and evaluating information, ideas, and assumptions from multiple perspectives to produce well-reasoned analysis and understanding, and leading to new ideas, applications, and thoughts" (University of South Carolina Aiken, n.d.). These definitions demonstrate how library instruction has evolved into a complex array of critical thinking skills taught to university students by academic librarians.

Library instruction varies across academic institutions. The traditional method of library instruction involves a librarian visiting a classroom to provide an hour of content based on what the faculty member requests. The request may be to help students with an upcoming assignment or to tell students about the campus library and its services. These sessions are labelled as *one-shots* by librarians (Bowles-Terry & Donovan, 2016; la Plante, 2013) and the term is often used with disparaging connotations (la Plante, 2013). Criticism for this format of library instruction is

generally due to time constraints that lead to poor pedagogy and scalability across the institution (Bowles-Terry & Donovan, 2016; La Plante, 2013). Bowles-Terry and Donovan (2016) describe the one-shot as the marginalization of the "pedagogical expertise of librarians" (p. 137), while Rabine and Cardwell (2000) describe it as a reduction of the librarian to "the role of a guest lecturer . . . with little control over the assignment" (p. 326). In addition, these sessions also rely on the cooperation of faculty to partner with the librarian and give up some of their valuable class time.

In the last decade, the one-shot has come under fire from academic librarians who view it as bad pedagogy and harmful to the development of information literacy skills in students (Bean & Thomas, 2010; Bowles-Terry & Donovan, 2016; Keller, 2020). In most academic disciplines, students are not expected to learn everything in one semester. Therefore, an expectation that students might learn everything they need to know about using the library in one hour seems a denigration of the discipline (Spievak & Hayes-Hobonan, 2013). To remedy that problem, "multi-shot" sessions have been developed in which students work with a librarian over several sessions to better recall and apply the information provided (la PLante, 2013; Walker & Whitver; 2020). Other academic librarians have created credit-bearing information literacy courses, allowing for extended learning and practice with skills (Badke, 2008; Jardin et al., 2018; Mayer & Bowles-Terry, 2013; Pashia & Critten, 2019; Webber & Johnston, 2000). And an increasingly popular methods are tutorials, videos, or microcourses through the library website or campus LMS (Baer; 2021; Befus & Byrne, 2011; George & Martin, 2004; Greer, 2016; Julien et al., 2018; Lo & Dale, 2009; Moran, & Mulvihill, 2017; Peacock et al., 2020; Stark & Peacock, 2019; Stiwinter, 2013; Wray & Mulvihill, 2018; York & Vance, 2009).

Online Learning

Online, or e-Learning, is defined as "the use of electronic technologies to create learning experiences" (Horton, 2012). In this study, *online learning* is used to describe a variety of web mediated synchronous and asynchronous delivery methods which include video, tutorials, courses delivered via a website or LMS, and video conferencing software (Martin & Oyarzun, 2018). Harasim (2012) shows early online learning was conducted in the 1970s by Arpanet researchers, followed by fully online courses beginning in the 1980s. Seaman, Allen, and Seaman (2018) reported that in 2015, 70% of institutions provided some sort of distance education. However, during the COVID-19 pandemic, faculty overall were unprepared to deliver courses online (Brooks & Grejeck, 2020) and Hodges et al. (2020) emphasized that "emergency remote teaching" is not the same as well-designed online courses.

Clark and Mayer (2016) stress that benefits gained from online learning depend on the extent to which the learning uses research based instructional design principles and emphasize the importance of selecting the correct methods of delivery. The success of online learning begins with good instructional design. Merrill's (2002) *First Principles of Design* distills many of the instructional design theories and models into a common set of design considerations for learning. Sweller (1988) maintains that content should be broken into meaningful chunks to avoid cognitive overload. Multimedia used in online learning should also be designed with care to avoid cognitive overload, such as including too much text on screen with redundant audio (Clark & Mayer, 2016). Keller's (1987a; 1987b). The ARCS (Attention, Relevance, Confidence, and Satisfaction) Model of Instructional Design can be used to examine motivational aspects in learning design. Designing online instruction requires good theory and practice, just as in designing face-to-face instruction. However, researchers agree that while there is some transfer

of skill between face-to-face and online instruction, additional competencies are required to provide effective online instruction (Harasim et al., 1997; Stephenson, 2001)

In higher education, support for online learning is usually carried out by professional instructional designers and developers (Ritzhaupt & Kumar, 2015). Allen and Seaman (2011) noted that 6% of the universities examined had no training or support for faculty teaching online courses. Many institutions rely on instructional designers for all online course development while disciplinary faculty serve as the subject matter experts and course facilitators. This method promotes effective use of theory and practice to ensure quality standards are met. However, perceptions of the quality of online learning remain mixed, particularly from faculty.

Faculty perceptions of teaching online courses continue to provide mixed results, with many faculty viewing face-to-face instruction as superior (Bunk et al., 2015; Moore, 2005; Walters et al., 2017). However, there may be other factors that influence faculty perceptions of online learning, such as the content taught (Moore, 2005), the availability of technology or other tools (Chaisson et al., 2015; Kurtz et al., 2004; Walters et al., 2017; Windes & Lesht, 2014), the type of institution (Windes & Lesht, 2014), the campus support for online learning (Bunk et al., 2015; Chaisson et al., 2015; Kurtz et al., 2004), and prior experience teaching online (Chaisson et al., 2015; Walters et al., 2017, Windes & Lesht, 2014). Research on faculty perceptions indicates that continuing to support the quality design of courses and training for faculty on how to deliver these online courses is important.

The world of higher education is rapidly changing. Academic libraries continue to be well-positioned to support online learning (Lankes, 2016, Chapter 14). However, just as is true for professors in disciplines outside libraries, effective design and delivery of online learning is essential to the success of library instruction.

Library Instruction and Online Learning

As the role of online learning has evolved in academia, so has library instruction evolved to meet the growing need for online options in higher education, and in lower-level undergraduate library instruction as well (Baer, 2021; Greer et al., 2016; Peacock et al., 2020). Greer et al. (2016) indicate that "if libraries can identify ways to effectively design meaningful instruction online, librarians can integrate information literacy frames across the [university]" (p. 296). In fact, academic librarians have engaged in a variety of online learning practices since the early 1990s (Frederick, 2004). These practices consist of instructional tutorials, video lessons, and, occasionally, courses delivered via an LMS (Baer; 2021; Befus & Byrne, 2011; George & Martin, 2004; Greer, 2016; Julien et al., 2018; Lo & Dale, 2009; Moran, & Mulvihill, 2017; Stiwinter, 2013; Wray & Mulvihill, 2018; York & Vance, 2009). In addition, microlearning—breaking longer sessions into small chunks of instruction—is an increasingly popular way to deliver online content to students in libraries (Stark & Peacock, 2019). However, the question that remains is whether online library instruction is as effective as the in-person methods (Beile & Boote, 2004; Johnson et al., 2000; Weightman, 2017).

Academic librarians tend to use two methods to evaluate effectiveness of online instruction: surveys of student perceptions and assessment data from quizzes and assignments. The library literature shows a variety of strategies for investigating perceptions of online learning; these can include Likert-type scales on attitudes (Hess, 2014; Silk et al., 2015) and motivation surveys (Befus & Byrne, 2011; Peacock et al., 2020). Other researchers have used pre- and post-test analyses (Hess, 2014; Johnson et al., 2000; Salisbury & Ellis, 2003), while some have used experimental design to compare groups of students (Beile & Boote, 2004; Greer et al., 2016). Withorn et al. (2020) show that academic librarians frequently engage in

assessment and evaluation of library instruction. However, most librarians are not formally trained instructional designers or teachers and are also not formally trained in assessment techniques, resulting in much of the instruction done is based on practitioner case-study articles from the field.

Academic Librarians and Library Instruction Competencies

Competencies can be described as: knowledge, skills, or abilities that indicate qualification to perform a job function; when competencies are defined they also provide a standard of achievement (Kerka; 1998; McClelland, 1973; Richey et al., 2001; Spector & De la Teja; 2001). The profession has created standards and competencies for libraries and librarians throughout the existence of the Association of College and Research Libraries (ACRL). The 1985 Proficiencies for Instruction Librarians (as cited in Westbrock & Fabian, 2010) provide a set of competencies aimed at curriculum and course planning for face-to-face library instruction.

Shonrock and Mulder (1993) reviewed the 84 ACRL competencies which academic librarians believed were most important in their work. These 84 competencies were broken down into 13 categories which are: write goals/objectives, instructional ability, writing lesson plans, communication skills, employ research/evaluation methodologies, media skills, planning, administrative, budgeting, plan staffing, train/evaluate, promote programs, and evaluate effectiveness of programs (Westbrock and Fabian, 2010). They found that 25 of the 84 competencies had means over 4.0 on a five-point Likert scale using a national survey. Of these, the competencies listed in the communications domain were most important, followed by general instructional methods and planning abilities. Participants also indicated that these skills should be taught in the formal Library Science curriculum. However, Madnernack (1990) found that, at the time, most academic librarians relied on self-study and workshops to develop their

instruction competencies, a finding supported by studies done by Powell and Creth (1986) and Shonrock and Mulder (1993) and Ducas et al. (2020). However, Ducas et al. (2020) also found that academic librarians reported feeling confident in their abilities to learn instruction skills through various forms of self-study.

In 2007, the ACRL's Instruction Section adopted a new set of competencies for instruction librarians (ACRL Instruction Section Proficiencies for Instruction Librarians Task Force, 2007). Westbrock and Fabian (2010) endeavored to recreate the Shronrock and Mulder (1993) study using these new competencies to: 1) analyze the importance these new competencies had among practitioners; and 2) analyze any changes in how academic librarians acquire these skills. Westbrock and Fabian (2010) found that collaboration with classroom faculty, assisting students with information literacy skills, scaling content for time and space, using appropriate language for student learning levels, and pre-planning instruction were the most highly ranked proficiencies. The majority of respondents indicated they learned to meet the competencies on the job but would have preferred to learn them during their master's programs. However, as the field has evolved, so, too, did these competencies.

In 2017, the Standards and Proficiencies for Instruction Librarians and Coordinators Revision Task Force recommended a revision to the previous competencies (American Library Association, 2017). Thus, the *Roles and Strengths of Teaching Librarians* was adopted by the ACRL. The Task Force's approach to the new document was to "adopt a contextual, holistic approach and wider vision which encompasses the roles and responsibilities of the instruction librarian within the academy" (para. 1). Armstrong (2019) describes this document as helping academic librarians approach instruction with agency and creativity. This new document hoped to satisfy a variety of organizational needs, such as providing guidance to hiring instructors,

giving benchmarks for professional development, goal setting, and promoting instruction related courses in library and information science curriculum (American Library Association, 2017). In reviewing the vast array of practices academic librarians who teach undertake, they developed the following roles: advocate, coordinator, instructional designer, lifelong learner, leader, teacher, and teaching partner, with each role having a small subset of related strengths. The document was left purposefully broad to allow for flexibility without stipulating specific competencies.

While these competency documents have been reviewed and revised several times, there is little indication that they have been used to evaluate how librarians apply these competencies to their instruction. Westbrock and Fabian (2010) concluded that while at the time of their study there was little evidence that the 2007 competencies were actively used to evaluate academic librarians and their instruction. Peacock (2001) developed an earlier *Professional Information Literacy Development Model* (PILD) that had used peer mentoring and the original competencies. Botts and Emmons (2002) proceeded to create their own set of teaching competencies for their academic library noting, "effective teaching is one cornerstone of any successful library instruction class, yet pedagogy is often overlooked while developing the library instruction" (p. 66). Likewise, there is little research available to show the efficacy of the *Roles and Strengths for Teaching Librarians* document.

Bryan et al. (2018) examined the evaluation of academic librarian instructors and found few libraries had formal evaluation methods, rather student assessment and perception data was primarily used for evaluating instruction. To combat this trend, Bryan et al. (2018) developed their own evaluation form using the *Roles and Strengths for Teaching Librarians* document to help academic librarians evaluate their face-to-face instruction. Without much evidence, it is

difficult to ascertain whether these roles and strengths are truly useful to the profession. There is also no evidence these roles and strengths provide guidance related to the evaluation of effective online instruction by academic librarians.

Academic Librarians and Online Instruction Competencies

To date, there are no specific competencies available for librarians who teach online, in spite of the unique instructional role they play at an academic institution. Much of the literature focuses specifically on evaluating the online learning objective rather than evaluating the academic librarian's ability to create and communicate the instruction. Dewald (1999) and Bowles-Terry and Hensley (2010) worked to create best practices in the creation of online library instruction. Blummer (2007) examined student scores to evaluate those scores as a measure of successful online delivery. Lo and Dale (2009) evaluated academic librarian and subject specialist relationships in the creation of these materials. In addition, gathering student perceptions of online learning materials (Befus & Byrne, 2011; Hess, 2014; Peacock et al., 2020; Silk et al., 2015) gave evidence of what students perceived as successful. However, these findings alone do not provide a method for measuring the academic librarian's ability to successfully provide online library instruction.

Also absent from the literature is how to develop competencies. Shank and Bell (2011) noted a criticism of the 2007 revision of instruction competencies when they perceived a lack of instructional design and online learning-related-content necessary for the contemporary librarian to provide online instruction. Shank (2006) and McTavish (2019) took a different approach in evaluating the roles and responsibilities of librarians in their preparedness to teach online by examining job advertisements. While their approach provided some insight into potential gaps in the field, it did not address the actual desired competencies needed to perform the work.

However, some research on developing faculty competencies for online instruction exists outside of the Library Science literature (Alvarez et al., 2009; Bigatel et al., 2012; Darabi et al., 2006; Martin et al., 2019; Smith, 2005). Martin et al. (2019) described the field of research in higher education online teaching and learning, in general, as primarily being best practice based. This approach tends to overlook the underlying importance of whether the faculty were able to create and deliver a quality online experience to begin with. Bigatel et al. (2012) used a survey instrument to gather feedback from experienced online teaching faculty to determine the level of importance online instruction skills had for their roles as online instructors. A set of competencies was then developed by the authors. Alvarez et al. (2009) used multiple methods to analyze important online instruction skills. These methods included a content analysis of literature, analysis of professional development activities, and a focus group with faculty. Results showed there were three main categories of skills: 1) planning and design, 2) social, and 3) classroom instruction. The use of experienced instructors to help provide insight into the intricacies of online instruction is also exemplified by Bailey and Card (2009), who identified a set of pedagogical practices that all e-learning instructors should possess. In Martin et al. (2019), researchers worked with award winning faculty across the country to understand the strategies employed by those faculty that led to successful courses. Using themes discovered via interviews, a set of core competencies was created to help other faculty acquire the necessary skills for providing quality online courses. These studies exemplify a variety of approaches for developing competencies for higher education faculty that provide insight into how similar competencies could be integrated into academic librarianship.

In addition to the variety of studies performed to generate competency lists, many professional organizations have adopted professional standards and competencies for online

instruction. Darabi et al. (2006) worked to validate online teaching skills via a job and task analysis using those created by the International Board of Standards for Training, Performance, and Instruction (IBSTPI). Educator competencies for IBSTPI (2003) include 22 competencies in the broad categories: professional foundations, planning and preparation, instructional methods and strategies, assessment and evaluation, and management. OLC (2021), a leader in online learning education, describes their standards for online education as: learning effectiveness, scale, access, faculty satisfaction, and student satisfaction. The International Society for Technology in Education (ISTE) also has a set of standards for educators. The ISTE (2021) standards are based on instructor roles with 24 standards in the following categories: learner, leader, citizen, collaborator, designer, facilitator, and analyst. The Association for Education Communication and Technology (AECT), a world leader in educational technology, adopted standards in 2012 comprised of the following categories: content knowledge, content pedagogy, learning environment, professional knowledge & skills, and research. These standards and competencies provide insight from international experts in online teaching and learning and can be used to support the creation of online learning competencies for academic librarians.

The goal of this study is to provide the critical insight that appears to be lacking in the field of academic librarianship regarding how to develop specific competencies for online instruction knowledge, skills, and attitudes. The competencies derived in this study are consistent with the board suggestions in the *Roles and Strengths for Teaching Librarian* document and address many of the concerns with the lack of online instructions skills from Shank and Bell (2011).

Chapter III: Methods

Introduction

This study fills a gap in the library literature to define competencies for online library instruction as well as to define the barriers that may prevent librarians from being successful in providing this instruction. When identifying ways to improve performance, needs assessments are often used. *Needs assessment* is the process used to determine performance gaps between a desired state and what is currently being exhibited (Altschuld & Kumar, 2010). There are many types of needs assessment models making it necessary to examine all of them to identify the most appropriate model for the desired outcome. This study required a model that would examine employee performance across a job description at a national level rather than a specific individual at a specific company. The following section will describe the various needs assessment models available and the reasons for selecting a competency-based needs assessment.

Needs Assessment

Needs assessments are performed for a variety of reasons, for example: addressing a performance issue, improving current practices, or identifying areas to help with expansion (Stefaniak, 2020). Most needs assessment models involve the following stages: 1) identifying the specific challenges the problems present, 2) determining what the desired state of performance is, and 3) identifying the specific gaps that are preventing the desired state from being achieved (Harless, 1970; Kaufman et al., 1993; Rossett, 1987). A needs assessment can be taken a step further by performing a needs analysis to ascertain the root causes for the gap identified (Guerra-Lopez, 2008; Kaufman & Guerra-López, 2013). A crucial element of a successful needs assessment is an ability to focus on the problem but also keep an open mind, allowing the

solution to emerge directly from the data gathered (Harless, 1970; Mager & Pipe, 1997). Some needs can present themselves directly as a need for knowledge, skills, or training (Rossett, 1987; Sleezer, 1991; Sleezer, 1993). However, the general purpose of a needs assessment is to gather and analyze the data to ensure the problem and solution complement each other, rather than leading with a solution (Harless, 1970).

Needs Assessment Models

There are many approaches to the needs assessment process. Scholars have adapted different forms of categorization which will be described to provide insight into the range of models available for performing a needs assessment (Gupta et al., 2007; Kaufman, 1977; Kaufman et al., 1993; Kaufman & Guerra-López, 2013; Rossett's 1987; Sleeze,1992). Gupta et al. (2007) defines four categories of needs assessments: knowledge and skills assessments, job and task analysis, strategic needs assessments, and competency-based needs assessments. Each of these categories can encompass a variety of models based on the purpose of the model. Gupta et al.'s categorization provides an easy-to-understand schema that will be used to discuss needs assessment models further. It should be noted that while Gupta et al.'s categorization helps simplify the comparison between types of needs assessment, there is still quite a bit of overlap between the four categories. This means that while some models may be comprised of elements that fit into different categories, in other cases, the models do not fit into the aforementioned categories and are discussed in their own section on general models.

Knowledge and Skills Assessment

Knowledge and skills assessments are used when looking at the requirements of a job and how knowledge and skills gaps can be closed (Gupta et al., 2007; Harless, 1970; Rossett, 1970). Tiemann and Markle (1984) state that the knowledge of which actions to take for a particular

task is as important as the task itself. This type of needs assessment is best used when new job responsibilities need to be assumed, training programs are being examined for updates, or the organization is experiencing some type of rapid growth (Gupta et al., 2007). Knowledge and skills assessments follow five general steps: collecting background information, creating a plan, an analysis of training requirements, analyze data gathered, and present results (Gupta et al., 2007).

A key benefit of the type of assessment described above is that it is relatively easy to conduct, as it does not require as much time as other methods. In addition, examining learner knowledge and skills ensures a parallel instructional solution that meets the specific needs of the learners being examined (Gupta et al., 2007). A primary drawback to these types of knowledge and skills assessments is that they tend to lack depth, particularly in the types of assessment tools used, such as knowledge tests. In approaching a complex problem that may have many stakeholders involved, or an organization with many moving parts, this approach may miss details regarding why there was a performance problem to begin with (Gupta et al., 2007). These types of assessments, as well as task analysis, are found in a variety of learner settings whereas strategic needs assessments and job analysis tend to be more focused on organizations.

Structural needs assessment are types of knowledge needs assessments that follow a similar process to that described by Gupta et al. (2007), however, these assessments try to overcome the lack of depth knowledge assessments may have (Goldsmith & Kraiger, 1997). These approaches work to create a rich description of the learner's knowledge while ensuring that higher order processes are built into the knowledge retrieval process and show relationships between concepts. Bloom et al. (1956) would describe the difference as one of merely being able to recall the knowledge versus being able to do something with the knowledge. Such a difference

can help overcome a training failure such as the one known as *teaching to the test*, in which students conceive of the knowledge needed as simply being able to pass a knowledge-based test and may not care about how the knowledge is applied (Goldsmith & Kraiger, 1997*).*

Harless (1970), Mager and Pipe (1997), and Rossett (1987) all include knowledge and skill deficiencies as a trigger for a needs assessment in their models. These models also include a job and tasks analysis as a component of identifying training needs.

Job and Task Analysis

Job and task analysis needs assessments are most often used when examining the tasks and requirements of a specific job (Gupta et al., 2007). These types of assessments are best used when job descriptions need to be written/evaluated to meet organizational needs, or when training requirements are being created, usually for specialized skill sets. A job task analysis follows a three-step process in which high performers for the job being investigated are identified and their performance analyzed. The second step is to organize job requirements/tasks and identify any that require instruction for learners to perform. The final step is to report on recommendations and/or a training plan. Generally, a job and task analysis focuses more on individuals or specific organizational functions, rather than a whole organization. Gupta et al. (2007) indicate that a benefit of this type of assessment is employee buy-in, although it could also be a potential obstacle for the assessor if employees feel threatened by a process that will likely feel more invasive to them.

Job/task analysis is helpful in providing profiles of needed skills, realigning position descriptions with the actual requirements of the job being performed, creating a competency profile for future hires, and creating learning plans (Gupta et al., 2007). While this type of needs assessment is called analysis, it should be noted that it is not a needs analysis as previously

defined (Guerra-López, 2008; Kaufman & Guerra-López, 2013), as it does not examine external impacts that may influence an employee's performance. This approach can require a large input of time and money to conduct. Many of the data collection strategies suggested for a job and task analysis can include time studies, naturalistic observations, and consensus building sessions (Carlisle, 1986; Gupta et al., 2007). Carlisle's (1986) model of analyzing jobs and tasks indicates the importance of data gathering by stressing that focusing on a single solution is sure to lead to poor recommendations, necessitating multiple streams of data. In fact, Carlisle describes thirty-one different techniques for gathering data in a job and task analysis.

Mager and Beach (1967) include job and tasks analysis in their work on developing vocational instruction. They describe a *Vocational task analysis* as a set of actions required to complete a job (p. 10). In their model, tasks are identified in terms of frequency of performance, the importance the task has to the job, and the difficulty level of learning the task. As with the knowledge and skills needs assessments, a recommendation of training is the end result of Mager and Beach's model. Harless (1970) and Rossett (1987) also include a job or task analysis as part of their overall models and Slezzer (1991) includes a work behavior analysis in her model.

Strategic Needs Assessment

A *strategic needs assessment* is used when learner performance issues directly affect a business or organization's strategic plan, mission, or other organizational goals (Gupta et al., 2007). These types of assessments are also described as systems approaches by Kaufman (1977) and Rummler and Brache (1988). These needs assessments target organizational aspects such as overall business strategy, a company's bottom line/return on investment, or consider how a company can meet expanding organizational needs. These types of assessments follow a process of gathering background information about the situation, examining the external and internal

environments (documenting and identifying gaps in performance), developing a vision for the future environment, and finally, recommending a plan for improvement (Gupta et al., 2007).

The overall process for a strategic needs assessment follows a pattern similar to other types of needs assessment. The goals of this type of assessment include: finding long term solutions, discovering problems that may be affecting core business strategies, helping organizations cut activities that do not provide value, and providing a holistic view of a problem (Gupta et al., 2007; Kaufman & Guerra-López, 2013). These types of needs assessment are costly in terms of both time and money due to the wide variety of external and internal data gathering required. Furthermore, they tend to be most effective when the organization has a clearly articulated business strategy to work from.

Strategic needs assessment takes a holistic approach to analyzing organizational needs. In Kaufman's *Organizational Elements Model* (Kaufman et al., 1993; Kaufman & Guerra-López, 2013), external and internal organizational elements are examined, including the following: impact at a societal level, organizational goals (such as revenue, profit, graduation rates), competencies, internal processes, and inputs the organization must include to meet desired results. In this model, training may or may not be a solution as there may be a variety of issues that could be causing a performance gap. Similarly, Zemke and Kramlinger (1982) and Slezzer (1991) begin at the organizational level to do an analysis, however, unlike Kaufman, their analysis is to derive organizational information specifically related to training needs.

Competency-Based Needs Assessment

Competency-based needs assessments are used when identifying competencies is necessary for exemplary performance, or in creating a depiction of a best-practice for a job function (Gupta et al., 2007). Competency-based needs assessments also identify barriers, or

deficiencies, that may hinder success. Marrelli (1998) defines a *competency model* as a conceptual framework or organizing scheme that allows people in an organization to "understand, talk about, and apply the competencies" (10). Kaufman (1977) describes epsilon needs assessments as those that help determine performance effectiveness when the job has been done but requires identifying the gap between goals and objectives. Competency-based needs assessments are best used when management desires job competencies to be established for evaluation purposes, when an organization desires to establish a template for a job, or when a professional group desires to align a job across many organizations, cultures, and countries.

The competency-based approach to needs assessment can provide a variety of organizational benefits (Gupta et al., 2007; McLagan; 1980; McLagan, 1997). These benefits include higher job satisfaction among employees who understand exactly what is expected of them in their position, as well as benchmarks that distinguish performance. Like a knowledge/skills assessment and job/task analysis, this assessment can be used to create training programs, and also to create standards for certification. However, it needs to be kept in mind that this type of needs assessment can be time consuming due to the large amount of data and analysis required to develop the competency model.

Competency based needs assessment follows a phased approach (Gupta et al., 2007, McLagan, 1997). First, a project plan is developed in which parameters and key players are identified. This is followed by behavioral interviews of high performers to obtain preliminary and behavioral information, which can be one-on-one interviews or as focus groups. The interview information is then analyzed for themes and a competency model is developed. The model is the visual display of competencies derived from the thematic analysis. The next step is to conduct a gap analysis of all job performers to assess where they are in comparison to the

desired competencies in the model. These results are then analyzed and used to create an implementation plan based on the findings.

General Models

As noted, there are a variety of models that are comprised of multiple categories of needs assessments. The models discussed fall into two categories. The first category is training needs assessments, which follows a similar process of assessing needs, designing and developing the training, and delivering training. The other type of model is program evaluation models which are similar to needs assessments, however, the main difference is that the overall goal is evaluate a program rather than employee performance.

Training needs assessments are systematic studies which use data and opinions from a variety of sources to make effective decisions or recommendations about training (Rossett, 1987). However, with all needs assessments, it is important to ensure that training is, in fact, the desired solution. In Rossett's *Training Needs Assessment Model*, the trainer is instructed to evaluate and understand a combination of what employees can do, what they should be able to do, their feelings, and potential causes of performance issues. In training needs assessments, as with competency-based needs assessment, subject matter experts are used to help determine the level of achievement present and needed. In some cases, the desired level of performance can have invisible components and these experts help determine observable behaviors through interviews and tasks analysis.

Mager and Pipe (1997) explain their approach to analyzing training performance problems with a specific emphasis on fully understanding a problem before beginning on solutions. Solutions that are rushed can lead to wasted resources that do not actually lead to resolving a problem. This approach fully examines a performance problem, whether it is

something that should be fixed, and whether there are simple ways to fix it, before moving forward. Environmental factors are fully investigated to determine whether the performance problem is rewarding or punishing. In addition, task analysis is done to determine whether employees were able to perform the task in the past and if simplifying the task helps negotiate the performance problem. Finally, solutions are fully investigated to determine the costs and the benefits to the employees and organization before recommendations are made.

Another training needs assessment model is presented by Harless (1970). This model examines the gap between the actual situation and the desired situation by examining indicators, symptoms, and effects which help define the overall problem. The overall problem can then be defined as skill or knowledge deficiency, a motivational or incentive discrepancy between what the organization offers and employees need, or environmental problems that exist within the organization. The first problem, a skill or knowledge deficiency, can generally be solved with training. However, the second two problems are organizational issues that may be uncovered by the assessor during the needs process. Gilbert's (2007) *Behavior Engineering Model* describes these final two problems as barriers while Mager and Pipe (1997) describe them as obstacles.

Program evaluation models attempt to determine the value of whatever is being evaluated (Worthen et al., 2004). Such program evaluations can be found in use in educational situations in judging curricula. They can also be utilized in the corporate world for evaluating anything from a training program to examining the effectiveness of a new policy on employee performance. Worthen et al. (2004) categorize program evaluation approaches into four categories: objectives-oriented approaches, management-oriented approaches, consumer-oriented approaches, and participant-oriented approaches. The program evaluation models, like the training needs assessment models, are multifaceted and may draw in elements from multiple

categories. However, similarities can be found between these categories and the needs assessment categories used by Gupta et al. (2007).

Here are two examples of evaluation models to exemplify the similar thinking behind these approaches. Scriven (1991) developed the *Goal-Free Evaluation* (GFE) model. This model evaluates processes and context rather than focusing on analyzing goals which can lead to tunnel vision (p. 57). The evaluator in this case conducts the evaluation without predetermined goals and objectives, looking at what a program does rather than what it intends to do, using a variety of research tools. This approach is similar to the way Mager and Pipe (1997) describe their approach in performance analysis. Stufflebeam's (1971) *CIPP (Context, Input, Process, Product) Evaluation Model* is built on two goals: helping with decision making and accountability. It begins by examining aspects such as needs, resources, and problems, budget, stakeholders, and strategies, followed by an evaluation of program activities and evaluating the extent to which the program outcomes are successfully addressed. While these models have a similar spirit in their approach to identifying what is going on in a particular situation, the focus of the research project described in this proposal favors a human performance lens rather than a programmatic evaluation one.

Methodology

The research described in this proposal is based on the framework of a competency-based needs assessment as described by Gupta et al. (2007) and McLagan (1997). Because the professional organization for academic librarians does not currently have a set of clear competencies, research which identifies and creates competencies will help graduate degree programs realign instruction and academic librarians develop professional strategies for meeting the changing instructional needs of students. Thus, a competency-based needs assessment was

selected to examine a population of selected professionals scattered across academic libraries throughout the United States. In a competency needs assessment one first establishes the competencies of a successful performer through interviews or other naturalistic methods. The information gleaned from these interviews in turn helps build a competency model (Gupta et al., 2007; Marelli, 1998) as well as discovering barriers as defined by Gilbert and other scholars (Winiecki, 2015).

This study employs a qualitative approach that seeks to select the designs that best match the desired data needed (Creswell & Creswell, 2018), using semi-structured interviews. Using this approach follows the framework set up by Gupta et al. (2007) and also allows the researcher to focus on a pragmatic approach to the research that is problem-centered and provides real-world significance (Creswell & Creswell, 2018).

To answer both research questions, semi-structured interviews were used. Interviews allowed the researcher to target specific questions, which in this study is particularly important as the research question specifies three themes to investigate in Research Question 1 and one theme in Research Question 2. In addition, interviews allowed the researcher to gather the contextual and historical information necessary to make sense of what the interviewees said (Creswell & Creswell, 2018). It is important to acknowledge potential bias in the interviewer and the possibility that some interviewees may be more articulate or provide more detailed responses than others (Creswell & Creswell, 2018). In this study, it was essential that the researcher asked follow-up or probing questions, using a person-centered approach, and qualified responses with interviewees if answers were unclear or additional clarification was needed to understand the meaning of comments (Ravitch & Carl, 2021).

Research Design

This research used qualitative behavioral interviews with professional experts to create a competency model for academic librarians who provide online instruction. In addition to the resulting set of competencies, a list of barriers that may make it difficult for academic librarians to meet the competencies was created.

Participants

Interviews were used to collect the data needed, as described by Gupta et al. (2004) with a goal of 24 total interviews. Participants were selected using purposeful sampling, from publicly available online information, based on the participants' librarian title (e.g., instructional design/online learning/curriculum development), experience with online teaching, and earned advanced degree in relevant discipline (e.g., instructional design and technology/curriculum). This information was found on library website employee profiles, professional websites such as LinkedIn, and in the Association of College and Research Library (ACRL) member profiles. This method of selection is consistent with the purposeful sample of award-winning online teaching faculty done by Martin et al. (2019) as well as the work done by Bailey and Card (2009) where narrow criteria is used to select participants that meet their expert profile.

Once identified, participants received an email invitation to engage in a 60-minute online interview with Institutional Review Board approval and a synopsis of the research study. The study was described as using a semi-structured interview process with specific questions and probing/follow-up questions as needed (Ravitch & Carl, 2021). Twenty-six participants who met the desired criteria were identified for this study. Due to the specific requirements to participate in this study and the response rate, it was necessary to include one additional participant who

was currently enrolled in a doctoral program rather than currently having a degree to meet the education requirement.

The population of identified individuals is quite narrow, therefore only limited demographic information is provided to protect their anonymity. Of the 26 participants contacted, 18 agreed to participate in this study, resulting in a 67% response rate. Participants have between five and 20 years of experience in academic libraries and the majority were female. This is consistent with the American Library Association's membership demographics showing 81% of members are female (American Librarian Association, 2017). Most of the participants were from doctoral granting institutions except for one who works at a master's degree granting institution. Fourteen institutions were public universities, with only four coming from private universities. Of these institutions, nine are classified as Research 1 institutions and eight have American Research Library (ARL) membership.

Data Collection

Semi-structured interviews were used to collect data, as described by Gupta et al. (2004). This method includes a discussion of the participants' roles as academic librarians, important elements that are needed in order for them to be successful in their roles, and narratives of successful and unsuccessful events in their work. An interview protocol was developed (appendix A) with five overall questions related to gathering information on competencies based on Gupta et al. (2004) and one question specifically on barriers. Questions two through six all had pre-drafted probe questions to guide the discussion, however, additional probing and clarification questions were also asked as needed. Interviews lasted between 40 and 70 minutes depending on the participant.

The interviews were recorded using the video conferencing software, Zoom. Participants' visible names were removed from the recording and they were instructed to avoid mentioning their specific institution or other identifying information. Zoom live transcription software was used to create an initial transcript which was then edited by the researcher based on the video. Any identifying information that may have been shared in the interview was then redacted from the final transcripts which were then used to code for themes.

Data Analysis and Validation

Interview transcripts were analyzed using nVivo software. The first cycle of coding was done using *In Vivo Coding*, where codes were assigned to coded transcripts sections based on the language of the participants (Strauss & Corbin, 1990). Saldaña (2016) summarizes the work of other researchers, concluding that In Vivo Coding is an applicable method for practitioner research, saying "the genre's primary goals [are] to . . . use terms and concerns derived from the words of the participants" (p. 106). Following the first round of coding, a second cycle of coding was done using an *Axial Coding* method. Axial coding works to form categories from the various pieces of codes found used in the first coding cycle (Strauss & Corbin, 1990). Charmaz (2014) describes the process as linking subcategories and categories into related themes. The final cycle of coding involved a *Codeweaving* process. Codeweaving is a process of integrating the many key terms and phrases used for codes into a usable narrative form (Saldaña, 2016). In this study, this process formed the competencies used in the competency model developed and required some final condensing of themes and refining of terms.

Given the abstract style of questioning used for the first five questions of the interview, it was necessary to perform a round of validation on the proposed competency model. Participants were asked to speak much more explicitly about barriers, resulting in little to no ambiguity in

their responses. Validity was gathered from the participants themselves using a member checking approach (Creswell & Creswell, 2018). Stake (1995) believes participants should be asked to comment on drafts and even the language used to ensure their views were accurately represented in the findings. Participants were emailed the competency list and asked to provide feedback on the findings and interpretation done by the researcher. The feedback was then analyzed for common themes and the model was updated to reflect the information gathered.

Chapter IV: Findings

Participants interviewed discussed a variety of knowledge, skills, and attitudes needed to be successful in performing online library instruction. In addition, they described barriers they believe would make it difficult for academic librarians to perform well. The final themes relevant to academic librarian online teaching competency which surfaced in the interview process are discussed in this section as well as the specific competencies that were derived from the list of themes. The feedback from the expert interviewees on the needed competencies will also be reported in relation to a final proposed list of competencies. Their feedback on the final list of barriers will also be reported.

Designing Online Instruction

In systematic instructional design processes, the planning for the instructional intervention comes first, followed by designing and creating the instruction. The expert participants also demonstrated the importance of this process in their interviews as this theme was mentioned by all 18 participants in 208 comments.

Systematic Instructional Design Process

Participants described the importance of following systematic instructional design processes in creating online learning. They mentioned these processes by name, cited specific models, or referenced specific elements within this overall process. These processes were mentioned by all 18 participants in 98 comments. For example, one participant said, “It would be helpful to have instructional design knowledge, as far as the process of developing curriculum from a systematic approach.” Another participant said, “I also think that foundational knowledge includes, for me, instructional design knowledge.”

An aspect of this process that was highlighted frequently was understanding the students for whom they are designing the instruction and their specific needs as learners. These ideas were mentioned by 17 participants in 34 comments. One participant spoke about working with professionals who were returning to school, often after 20 plus years. They spoke about how they worked to design their instruction to meet their specific needs and address many of the changes in using the library and doing research. Another participant added that any "information [you can get] about anything that's happening in the curriculum . . . about why you're being asked to do this session will . . . make all the difference from the planning phase to the implementation phase." A third participant summarized this sub-theme by saying you need:

> Knowledge of the institution, I think, also involves knowledge of, who are our various users that we have, main faculty who are our various stakeholders, as well as faculty and administrators . . . saying, okay, let me do a needs assessment, let me figure out where are there gaps? What are the things that exist I could fill these gaps? How are we going to build on them? What is our design process with our design team? What are the tools we're going to be [using]? There's all kinds of pieces to figure out.

A second sub-theme was lesson planning. While this theme was only mentioned by six participants, it is part of the instructional design planning process. One participant described this as "understanding what are the foundations of writing a good lesson plan or the foundations of thinking through . . . different goals and objectives. Like how are we understanding what we're asking our students to do, and then how are we getting them there in a way that makes sense for them?" Another participant described lesson planning as "how to plan time, how to structure lessons, and all the steps that you need to do of engaging and activating prior knowledge."

Evaluation was the other element of the systematic processes mentioned frequently by participants. This theme had 33 comments made by 15 participants. One participant emphasized that if specifical online learning objects were being created, “we need to be mindful of like reviewing those things and making sure they're serving the needs that we need to serve and making sure that they’re current and that students are getting what they need there.” Many of these participants described how they use assessments as part of their evaluation of instruction with others adding they also do end of session evaluations. Another participant discussed the various data points used when working with students to evaluate learning they created: “I was highly focused on identifying using metrics, assessment, survey data, student feedback and student performance to work with faculty to identify where there were real instructional challenges.” Of note, several participants lamented that it was sometimes difficult to collect evaluative data due to restrictions in the software used, access to LMS data or instructor’s online course, and class time/access to students to do surveys or other course follow ups. Many participants discussed using anecdotal evidence from the session or feedback from the course instructor on student performance on course assignments or comments made in class.

Converting Face-to-Face Courses to Online

The following sub-theme was about converting face-to-face courses to online courses. This was mentioned by 11 participants in 20 comments. Most of the comments were from stories the participants shared from the 2020/2021 school year in which they themselves had to transition from face-to-face to online instruction or they supported someone else who was making that change. One participant said the important aspect to understand in this transition “is . . . the difference between online learning and face-to-face learning, and how students interact at

a distance: as we know [it] is different from how they interact with us when they are face-to-face."

Another participant said that when trying to explain these shifts to others, "tone of the initial shifts is trying to focus on ok, I know I do this in a classroom, I know how I do this at a reference desk, or in the studio; but what does it look like to make that work online or how is it different?"

Learning Theory

A variety of learning theories were mentioned by nine participants in 22 comments. Some of these theories included: motivational theory, pedagogy, digital pedagogy, andragogy, cognitivism, constructivism, and cognitive load. One participant said in speaking about the importance of learning theory, "I think people often just think of 'oh, you build pretty things.' But in reality, we have to have a very strong understanding of learning theory" Another participant spoke about the importance of understanding cognitive load when creating instruction, especially video instruction in which an hour of recorded lecture is likely not the best option for students' cognitive load.

Principles of Multimedia Learning

A related sub-theme is understanding Principles of Multimedia Learning, as proposed by Mayer (2009). This sub-theme is mentioned specifically, with 21 comments made on this set of theories and their direct connection to online learning. Two other participants discussed the importance of chunking information in online courses and tutorials, a technique called the *Segmenting Principle* (Clark & Mayer, 2016). The *Personalization Principle*, using conversational language and quality of audio (Clark & Mayer, 2016), was also mentioned. One participant discussed their approach to teaching synchronous sessions in which they hoped to be an "engaged speaker and someone who feels like a real person" and another spoke about the

importance of quality audio in learning videos and ensuring the sound is clear, with no background noise. Another participant specifically mentioned the *split attention effect* in the *Contiguity Principle*, meaning words should be aligned with graphics (Clark & Mayer, 2016). They said, "If you have a labeled graphic, how do you label the graphic, you know, if you put the labels over here and then the graphics over here, you create split attention." In the same line of thought, seven comments specifically mentioned instruction message design elements that related directly to other elements of the *Contiguity Principle* and the *Coherence Principle*, which recommend that instruction should not include extraneous information in graphics (Clark & Mayer, 2016).

Universal Design for Learning

Universal Design for Learning (UDL) framework provides guidance on making instruction equally available to students regardless of whether a student discloses a disability (Gordon et al., 2016). It was mentioned by nine participants in 15 comments as an important design consideration. One participant described this theme by saying:

> I think there are things we're not considering in totality of . . . are there multiple ways people can access this? Multiple methods to access the same type of content, and then to be able to design it all as a comprehensive whole so that no matter how best a person goes about learning the materials that we're producing . . . it's universally accessible, regardless of how that person approaches it.

There were several comments made about considering diversity, equity, and inclusion when designing instruction, to ensure all students can connect with material. And two participants mentioned the need to consider openly accessible materials or open educational resources in online teaching and learning to reduce barriers to students in terms of accessibility and cost.

Library Instruction Practices

The final sub-theme relates to library instruction related practices and norms. One participant summarized this theme by saying that "having a good understanding of teaching library related instruction, I think, is probably the most important part [of designing online library instruction]." While this sub-theme was only mentioned by five participants in five comments, their references to information literacy concepts, the ACRL Framework for Information Literacy, and information literacy instruction best practices highlight a foundational aspect for all instruction done in academic libraries, whether online or face-to-face.

Teaching in Online Environments

Planning and creating the instruction is the first part of responsibility for online library instruction while teaching is the second aspect. This theme deals with online instruction when students are engaging with it. It includes aspects of facilitation, engagement, and feedback. This theme included 92 comments from 17 participants.

Synchronous Instruction

Managing synchronous online instruction was the sub-theme most often mentioned in interviews, mentioned by 15 participants in 51 comments. One aspect mentioned by multiple participants pertained to facilitating instruction and engagement in an online environment. Participants mused that many librarians have developed strategies for doing this in face-to-face environment but moving to video conferencing software has required shifts in approaching interaction with students. For example, one participant described the intricacies of managing a synchronous setting:

> It's a lot of pacing and time management, and being mindful of the tone and tenor of the room. So like, who's participating, who isn't participating? Are you keeping an eye on the

> chat to see other people who are just typing or people who are raising their hands to speak? How are you ensuring that everybody in your zoom gallery window is engaged with you as best that you can? And also being respectful of the fact that some folks need to have their cameras off.

The need for multitasking with the chat was reiterated by several other participants and one participant remarked that they encourage students to unmute to engage with them. Another participant remarked that it is important to remember "bio breaks" and the difference being on Zoom can have on students' cognitive load versus being in the classroom. Another aspect was utilizing breakout/discussion rooms to create engagement and allow students the opportunity to participate in these spaces in ways they may not have been participating in the main session. Multiple participants mentioned using collaborative documents, question and answer sessions, and polling software as additional methods for creating classroom engagement.

Asynchronous Instruction

Teaching in asynchronous environments was also mentioned by 11 participants in 20 comments. The most commonly described aspect was using discussion boards to interact with students. For example, one participant said "they [the course instructor] let me on the discussion board, and each student would post what their final paper was going to be. And she would suggest some resources, I would suggest some resources, and we did that for every student's paper." Another participant spoke about teaching strategies for discussion boards such as creating discussion summaries to address multiple student concerns in one space or even using pre-written feedback for online discussions or assignments. A third participant described how they use social media to broadcast some of the asynchronous instruction videos and can interact with students in that environment as well.

Instructor Presence

A sub-theme that spanned both synchronous and asynchronous instruction was instructor presence. This theme was mentioned by seven participants in ten comments. A participant who focused on an example of asynchronous LMS instruction said, “when you're in the course site, one of the things that's really essential is building an instructor presence, right, so that your students know that you're there, that you're a real person, and that you can help them as they work through their stuff.” Three participants spoke about being your authentic self while teaching synchronously. One participant said “you tell people about some of the most interesting theories you've ever heard, and they're just bored to tears. You tell them one little anecdote about your little kid and they're like, tell me more.” Another participant also reiterated that it is important to provide students with multiple methods to communicate with you such as private chat, private zoom conversations, email, or even meeting up in person.

Hybrid Instruction

Three participants mentioned hybrid instruction environments. One participant explained how they recorded some synchronous online instruction with a large amount of interactivity. When they were teaching, they made a special point of providing pauses and inviting future asynchronous attendees to join into the collaborative documents the course was using to include their thoughts and answers. Two participants spoke about their hybrid instruction which included an asynchronous online component and then using their face-to-face sessions to build on that experience by being intentional about how they spoke about the online aspect in the class.

Learning Technology

This theme comprises all of the technical aspects of online teaching and learning for both synchronous and asynchronous environments. This includes using various technologies,

developing or delivering instruction using these technologies, and related concerns with technology. As one participant described, “even if I didn't know how to use all of the tools, I needed to be able to figure out how to use those tools and any new tools.” There were 191 references made to this theme by all 18 participants.

Developing Web-Based Content

Developing a variety of web-based content was mentioned specifically by all 18 participants in 72 comments. Participants mentioned developing online worksheets, assessments, web pages, creating videos, and tutorials using software such as LibWizard (a library software from the company Springshare) or Articulate. Several participants mentioned the extra time and effort they spent on learning specialized coding and software (like Bootstrap or Articulate), however, these would be considered advanced skills and are usually outside the scope of competencies for academic librarians.

Most participants mentioned creating videos. There were 20 comments made on creating videos. One participant summarized this sub concept by saying, “I would say comfortability with some light video recording and editing . . . Just to be able to create a quick video with a slide deck in the background.” Other participants mentioned also needing to know how to edit audio for videos to ensure it is high quality and without white noise or other distracting sounds. Participants also commented on needing to know how video hosting platforms work and what options are available given the specific platform being used.

Participants also discussed creating online assessments using a variety of tools. The 19 comments made by nine participants mainly discussed creating quizzes, whether these were embedded in videos, the LMS, delivered using video conference software, or using forms like

Google or Qualtrics. Three participants specifically mentioned using this data to provide the course faculty with feedback on their students' performance or as proof of completion.

Learning Management System

The mostly commonly discussed technology was the learning management system. There were 26 mentions of using the LMS from 14 participants. Participants mentioned a variety of specific systems including Angel, Moodle, Blackboard, and Canvas. Participants all viewed being able to input content, use tools, and interact with students in LMS as essential for online library instruction. One participant summarized this sub-theme by saying "having just a basic understanding of how the learning management system works, what different options are available in the learning management system, makes my work a lot easier." A few participants mentioned specifically being able to embed videos and other digital learning materials in the LMS. One participant described how their "library website" is currently hosted in the LMS. And another participant emphasized the importance of knowing how to use assessment tools in the LMS such as quizzes, assignments, and discussion boards.

Video Conferencing Software

There were 18 comments made by nine participants regarding using the technology available in video conferencing software for online learning. One participant mentioned the fact that over the last year, some video conferencing systems have been updating quickly to meet user needs. Their regular practice was to "often just have to do a lot of practice sessions and make sure things work." Other participants mentioned understanding how to use breakout rooms became an important component of their synchronous instruction. Another participant talked about needing a level of comfort with how engagement tools work such as muting/unmuting, raising hands, and the chat window, especially while screen sharing.

Digital Accessibility

Applying digital accessibility principles to learning was mentioned by 11 participants in 22 comments. Digital accessibility comprises the specific considerations for an online environment in the Universal Design for Learning framework. One participant summarized this sub-theme by saying "definitely having an understanding and references for accessibility on the web, so the WCAG (Web Content Accessibility Guidelines)." Practices such as using headings appropriately, adding alt text to images, color contrast, and coding for screen readers were all mentioned. About a fourth of the comments were related to video captions. One participant said, "If I'm putting something on YouTube, knowing how to ensure that there is a transcript file linked and that the captions are correct and like knowing how to auto caption and then, make corrections."

Learner Analytics

Learner analytics were mentioned by nine participants in ten comments. These comments ranged from the benefits of learner analytics available in online systems, such as an LMS, to concerns about privacy. One participant described how the LMS "allowed us to use the surveys so that we could actually get direct data on how they were answering these questions, and being able to track facts, based on what we expected" which was used as part of their evaluating process. Another participant described the wealth of information on student performance they were able to finally collect when instruction was moved from face-to-face to online. They said "we suddenly had all of this data about how well students were understanding, and the fact that to their eyes, [it was an] anonymous environment, we had nearly 100% participation, where we would never get that in a face-to-face, learning environment."

The majority of the comments regarding learning analytics were positive. However, two participants discussed both the positive and negative side of learning analytics. One participant said:

> I think you're very well aware of in the last few years learning analytics [and] the emphasis institutions have placed on learning analytics and wanting to be able to utilize learning analytics to help students be more successful. From an institutional level it's really about how do we get our students to graduate on time and demonstrate that they are knowledgeable and can go out into the workforce and do what they got their degree in. The challenge, though, with learning analytics, is again because various vendors, you know, there's third party vendors, they're not developed in house usually, and those vendors can have very different rules and perspectives on privacy and student information. And, the university itself, depending again on the institution and their particular perspective, can sometimes have very different perspectives on student privacy when it comes to student learning.

Followed by a second participant who said, "as librarians, we have this whole concern about information security, data security and user privacy . . . we have questions about how institutions use that data or the third party . . . uses that data." This participant later added, "using a random online trendy education tool . . . it might be wonderful, but you're suddenly giving all the data to them [third party tools] independent of any contract or any kind of established relationship."

Technology to Fit a Need

Selecting technology can be difficult because there are so many options available. Participants noted 19 times the importance of selecting technology to fit their instructional need. One participant summarized the complexity of this process by saying it's "knowing that this easy [technological] solution is honestly the best because it reaches the student instead of spending

money or energy or cachet on something larger and more exciting." Another participant said, "We often try and overcomplicate online learning too, because we're like, oh well there are so many tools or technologies and things we could do . . . but, we just kind of need to dial it back and think about it more simply." Another aspect of this sub-theme is to understand what different technology is capable of and whether it can accomplish your learning goals. One participant told the story of a tutorial they created and the struggles they had with the technology they chose. Their conclusion was "I was trying to . . . bend the software to do [what I wanted] and it didn't really work."

Availability of Campus Technology

Another important aspect of selecting learning technology can be working within the technology resources that are available at an institution. Only five participants mentioned this sub-theme specifically, but others alluded to the sub-theme when they spoke about using the campus LMS because students are already using it for courses and are familiar with it. One participant said, "I think it's important to have knowledge of your institution's preferred platforms . . . understanding what these things are, what they do and do not do, having that background knowledge." Another participant said they used Microsoft products for evaluation purposes because they were a Microsoft campus and that would be a familiar tool for students. A final comment came from a contractual perspective with information and data security: "there are lots of exciting things [out there], and one of the challenges . . . is that you really do need a good reason to not use the tools that you've been provided with [at your university], because they're covered by contract."

Attitudes

Participants were asked several times to reflect on attitudes needed to be successful in online library instruction. All 18 participants provided insight into potential attitudes with a total of 168 comments related to attitudes.

Growth Mindset

The most commonly described attitude among participants were attitudes that can all be categorized into the concept of a *growth mindset*. Carol Dweck (2016) describes the psychological construct of *growth mindset* as an individual having the ability to develop their basic qualities through effort, strategies, and help from others. And within a growth mindset, we see characteristics such as curiosity, a desire to learn, flexibility, and framing failure as an opportunity to learn. Dweck (2016) describes failure as an unpleasant experience that does not define a person, rather "it's a problem to be faced, dealt with, and learned from (p. 63)."

Each participant referred to a facet of growth mindset during their interviews with a total of 92 comments. One participant used the term growth mindset specifically in their interview saying, "You need to learn how to use the different tools and systems, but you learn how to do that and you build up those skills by being open minded, by being flexible, by being curious, by asking questions, by trying things, by accepting failure, having more of a growth mindset." This comment summarizes the other sub-themes that comprise this larger growth mindset theme.

The term failure was mentioned 30 times by all 18 participants throughout their interviews. However, it was always with a positive spin. For example, one participant said they encourage colleagues to "not feel bad about their failures because we all know that, yeah, sometimes you try something and it just flops." Another participant described this theme as having comfort with "a lack of perfectionism." A third participant felt that it was important for

colleagues to share their successes and failures. They said, “I learned to say [to my colleagues] you're going to see me fail and hopefully you can learn from my failures as much as you learn from my successes.”

Flexibility was mentioned by 11 participants over 25 comments. Several mentioned running into problems with synchronous online instruction and having to be flexible because technology may not work correctly or there may be access issues. Three participants specifically mentioned ensuring they had asynchronous backup plans in the event technology interfered with instruction on the day of their sessions. Another participant spoke about flexibility in terms of working with faculty saying, “Some faculty members wanted things a certain way, other faculty members wanted things a different way, or different programs wanted different [modalities], and I just had to learn how to adjust.” Flexibility within the instruction was also mentioned by a participant who told a story of how they had a successful synchronous Zoom session with students while navigating the difficulty of students all having their cameras off. They concluded the story by saying “I think if I had insisted that everyone turn on their cameras and ask questions out loud, I would have gotten a very different response from that class than I did by being flexible.”

Curiosity was mentioned 14 times by 8 participants throughout their interviews. The majority of the comments had to deal with attitudes toward working with technology. For example, “having that inquisitive attitude towards technology, like what can this do for me rather than how is it controlling my behavior?” or “you need to have the curiosity to learn about the new technologies and the ability to use the documentation provided by vendors to answer your technical questions.” A second aspect was being curious about instructional approaches, for example, one participant said, “You know, you gotta have that willingness to want to be curious

and want to put things out there that maybe don't work, and then also the adaptability to stop and say hey, this isn't working, you know, we got to do something different."

The concept of being open to learning or new ideas is the final facet of growth mindset mentioned. Openness was mentioned by 6 participants in 11 comments. This sub-theme can be summarized by one participant who said "I guess being open and ready to learn. Really stepping outside of my comfort zone and knowing that sometimes questions and making mistakes are okay."

Learner Centered Philosophy

Another attitude mentioned by participants was to have a learner centered philosophy toward instruction. This attitude was mentioned by 11 participants in 23 comments. For example, one participant said:

> I think thinking of yourself as an educator and not just a librarian has been very helpful for me in designing these things because I try to think about what am I doing with this tutorial, or in the synchronous online session that's going to serve my students, not just in this moment, but as they go on throughout the rest of their like academic careers and in their lives outside of the space.

This sentiment was reiterated by several other participants who said, "Ultimately your goal is to help them [the students] grow, and so you want to support that and see the potential that they all have." Another participant described a time when online library instruction did not go well; in reflecting on that, they summarized by saying "It was a very me as an instructor, instructor centric . . . the attitude wasn't as student centric . . . And so I think upon reflection, you know, my attitude was very much like, well how do I just get this done because it has to be done."

Online Learning

A positive attitude toward online learning was mentioned by 11 participants in 20 comments. For example, having “an attitude that online teaching is not necessarily worse or better. It's necessary for many people.” Many participants lamented about the negative attitudes library colleagues had toward online learning, especially when the instruction had gone poorly or had low interaction. A participant remarked on the importance of being open to online learning from a universal design for learning perspective by saying “it's for students who can't come to class that day. It's for, you know, students who just need an alternate mode of engaging and information." A related facet of this attitude was to consider the scalability of online learning to reach more students. A participant said:

> I think universities and colleges need to really look at the strengths that online learning and online technologies can provide, to take advantage of those strengths, especially from an asynchronous learning perspective because that's just so scalable and so convenient and so accessible to students . . . It's now, you know, part of a basket of options, and clearly students, and at [my institution] it's very obvious, students that are working jobs have very busy lives need increased flexibility and increased access and online learning, both synchronous and asynchronous, can provide that.

Forward Thinking Mentality

A forward thinking mentality was mentioned by ten participants in 18 comments. This was an attitude of considering the future needs for instruction and continually keeping up to date with practices, techniques, and technology to support online instruction. One participant described this as “an eagerness to implement positive change and to push . . . a library forward even when there's . . . few people there that are excited about change and pushing things

forward." Another participant said people need to consider that "the research in the [online learning] field is happening outside of academia, so you need to have that knowledge to bring it back to academia" and that "it helps to be a big picture thinker versus an in the weeds kind of thinker" when it comes to online learning. Two other participants spoke about the fact that the pandemic pushed many universities online and now there is a need to consider how to move forward. One of these participants said, with regard to planning the future of their library's online learning options, "our enrollments will probably be declining on campus as our population shifts and the only growth that we're seeing in enrollments is online."

A second aspect of this is to consider the sustainability of instruction. One participant mentioned that they used specialized software to create some asynchronous modules but realized that they were the only person in the building that could use that software and that was not a good solution in the event another person would need to update that module. Another participant described ensuring that online learning modules were "something that would apply across grade levels at the university and then also across disciplines at the university because we wanted them to be generally useful, covering research skills that would apply to more than a specific class, more than a specific assignment." A third participant discussed considering how much time and effort certain tasks in online courses take, such as providing individual feedback to students. Their conclusion was that their current approach in a large-scale general education course was "not scalable and the burnout internally was horrible."

Technology as a Tool

Another attitude was related to technology and having an attitude toward technology that views it as another tool that can be used to support learning rather than a hindrance. For example,

> Sometimes I think people feel very constrained by technology, and I think that it is a helpful attitude to have that technology is a tool . . . And, it does have constraints, but we can work within constraints and we can do creative things. I think it's important to have an attitude that rather than thinking of technology as limiting the experience, really start thinking creatively about how to leverage the technology to enrich the experience that you're having.

This attitude was shared by four participants over seven comments. Other words that were used to describe the attitude toward technology were comfort and confidence.

Empathy

The final attitude is empathy. This attitude can be applied to colleagues, students, or anyone affiliated with online learning on a campus. Empathy was only mentioned by four participants. One participant talked about being empathic with colleagues who were learning to teach online for the first time in their professional lives by saying "just being able to be like, yeah, even though I do this all the time, it still can be intimidating and frustrating." Another participant discussed being empathetic with students:

> I guess like empathetic and just like understanding that it's very, it can be very hard for some folks who have never maybe done online learning before or it looks different than what they're used to, and taking that into consideration when you're designing things, when you're revising things as well.

Interpersonal Communication

Another aspect of the role of academic librarians in online library instruction pertains specifically to social interactions between colleagues, with faculty, and with other campus departments. This theme was mentioned in discussing specific skills but was also demonstrated

throughout participant's stories of their successes and failures. All 18 participants contributed to this theme with a total of 65 comments.

Negotiating Instruction

In discussing their experiences with online library instruction, 14 participants discussed having to negotiate and at times advocate with course instructors for online instruction formats. There were 25 comments related to this sub-theme and it should be noted that many of them were included as parts of larger stories. For example, one of the participants told a story of a librarian that spent a lot of time researching the possibility of moving their large-scale face-to-face instruction to a hybrid format with the bulk of the content being moved to an asynchronous module. In this story, the participant described the following:

> The librarian, who had been working with this course for a long time, did a lot of work to really engage the program directors or course directors and to ensure, if we were to follow this model, what would they want it to look like, what would be the most important, what would they be comfortable with. And so she got that buy-in from the course directors really early. And it allowed her to really go into this confidently and say, yes, this is the direction we're going to take.

Another participant reiterated this point by describing the additional work instruction librarians have done to "figure out how they can integrate it [online library instruction], align it, and increase interest with faculty" because library instruction isn't a required component of the curriculum. Other participants described having to take a stance to ensure effective instruction by being able to say no to unrealistic requests or advocating for compromises to create the best learning opportunity for students. For example, a participant described an interaction where they had to say:

> If you want me to come to your session, I'm more than happy to come and see your students. They have to work through this [a foundational asynchronous module] first, so build this into your syllabus, make this an assignment. This will encourage them to do it, and then we can do more engaged, active, meaningful learning that's centered around your assignment to make a connection.

Collaboration

A related theme is collaboration, whether it is with colleagues, faculty, or other campus units. Participants were clear that working closely with others was essential to the success of online library instruction. There were 30 comments made by 12 participants. One participant described the team approach to creating online learning, saying it helped to "create a highly functional team work dynamic, where a group of individuals can come together and work on a very specific, very time sensitive project to achieve, you know, specific goals that we had when we were designing the courses." Another participant described working on a project with another librarian where they were a content expert and finding that their collaborative work was of higher quality than their individual work. They acknowledged the challenge presented by creating online learning, specifically asynchronous online learning. Their conclusion was that "collaboration really enriches and helps…seeking out collaborative projects or looking for opportunities to work with somebody rather than just kind of working on one's own I think really helps." On the other side of that, another participant described the need for project management skills when it comes to collaborative projects in libraries, saying "to make this really work you need somebody who has that project management experience because otherwise it's like herding cats."

Campus Support Networks

Participants also described the importance of being able to network with and use campus support networks such as instructional designers, centers for teaching and learning, online learning departments, offices of accessibility, and learning technology support. These units can become powerful allies and allow for backchanneling when needing to get access to systems or even get advice. Six participants provided nine comments that supported this concept. One participant summarized this sub-theme by saying, “I think that is also a good thing to have as a skill or, you know, to be willing to ask for help, and then use it when you need it.” Another participant described getting help more specifically by saying, “and that's more important than any given technical skill, because there will be someone on your campus who knows how to do that [create videos] and who will be willing to spend 20 mins/ half an hour, or repeatedly answer the same question with you as you struggle to learn something.” This comment was supported by a participant who said, “I didn't have to be the expert because we had an office of assessment, so I would work with them.” And finally, a participant described issues of getting the library integrated into the campus LMS in a new position. They described their strategy by saying, “So, I want to say, make friends with everybody. I went around and got to know all of the people that could be helpful and where I could have some sort of input in some way.”

Barriers

Participants were asked to consider barriers that may make it difficult for academic librarians to be successful in providing online library instruction. Across the 18 interviews, 190 comments on barriers were made across ten themes.

Attitudes Toward Library Instruction

There were 59 comments made by 16 participants regarding various attitudes toward library instruction. These attitudes could be held by campus administrators, department faculty librarians work with, students, or librarians themselves.

General campus administrators, or even library administrators, may have certain expectations or views of what the library does, especially when it comes to library instruction. One participant described a challenge with needing library administration to advocate for technology needs: " . . . they may be getting pushback as well from other administrators or faculty that have expectations about how library instruction is supposed to go." While another described a campus view of the library that stems from campus administration, which impacts instruction efforts by librarians when they are viewed as "book purveyors": "I've had the experience where the library is just sort of an aside, right, like it's a service, and not devalued but not particularly valued either or seen very traditionally of what the library does like it is a warehouse and books." A third participant spoke about the impact of trying to work under administrators who lack understanding of what it takes to create online library instruction:

> Having an administration that isn't being super supportive that it's just like, yeah, we need some online instruction so just record a video of yourself being a talking head that should be very easy for you to do, like, it's the less your leaders and supervisors understand what goes into the instructional design process also, the harder time you're going to have getting the time and resources and understanding you need to produce something of quality.

Faculty may also pose a barrier to online library instruction. Several participants mentioned the problem of online library instruction often requiring access to the campus LMS. A

participant said “some of them [faculty] really didn't want me in their Blackboard course. And so it's really hard to communicate with students in the online space if you're not given access to that online space.” A second participant supported this comment by saying, “I know at a lot of places, if you're not teaching a class it [the LMS] is pretty nailed shut.” They added that “the undervaluing of library instruction, if you're on a campus where not many people know that's a thing. Where that's not strongly incorporated into the curriculum. You're just going to end up having fewer support resources, and more people regarding you suspiciously when you say, ‘Hey, I really want access to Canvas’.” Another participant described librarians as co-educational partners with faculty by describing the difficulty of “getting faculty to understand that . . . we’re thoughtful, intentional educators, just as they are thoughtful and intentional educators. And that we're bringing more to the table than just the resources and just scanning the book chapters for them.”

Participants also described attitudinal barriers that may come from students when they consider library instruction. A participant described the effect that poor faculty partnerships have on students’ attitudes: “Without faculty context, there’s this: why is this person talking to us, I can be at home playing video games, this is stupid . . . The ‘this is stupid and pointless’ attitude is always going to be a barrier. Some students have this mindset and when they do, it usually does come from some sort of previous learning experience.” A second interviewee reinforced this point by saying “For students, I get a lot of frustration around: ‘Why do I need to learn this? How do I do this? What's the point of this?’” A final participant described a potential root of negative student attitudes by stating:

> We are informal learning in a formal learning environment. If we do not have the ability to be incorporated into the formal learning experience, then we're always last. Even

> students who recognize that they need library instruction or that building these skills would be helpful or that they aren't getting the instruction they need to be successful and the library is offering that - it's still realistically . . . If it's not incorporated or even doesn't come from faculty that students should come do this - we're always [going to be] in competition with every other aspect of their life.

Librarian attitudes towards library instruction was also mentioned as a barrier. A participant described the barrier in terms of the changing nature of libraries: "folks who have been librarians for a very long time didn't necessarily become librarians to be teachers. But that's part of their job now. The role of the library has changed so much." Another participant supported this statement by saying the "majority of librarians that I've worked with . . . teaching is not topping the list of job responsibilities that tend to be people's favorites."

Job Preparation

A second barrier mentioned by 15 participants in 39 comments was a lack of job preparation in Library Science programs for the work required to be online library instructors. Most of the comments from participants described the lack of preparation provided by Library Science programs with regard to teaching and learning and if programs did provide courses on instruction, it was geared toward face-to-face instruction. One participant summarized the group's sentiment from their own experience, having felt a lack of preparation in their master's program, and also a lack of understanding of what would be expected in their teaching role:

> Library Science programs: in my experience, there was not a class around instruction, like how to teach. I didn't feel like teaching and learning was really at all part of my program. It's embarrassing to admit but I didn't even know teaching was going to be a part of my librarian job. I thought I'd be doing reference and maybe some cataloguing or

> something, but didn't know how much teaching would be a part of my job . . . So really I don't know that we're trained from the get go for teaching and learning, and then add to that online learning, I really think that's a huge barrier.

One participant mentioned that "if you don't have a 'me' [an instructional design librarian], that's a barrier." In fact, eight participants specifically mentioned their additional education in instructional design and technology, curriculum, or adult education as being an important aspect of their success in their librarian roles. For example, a participant said, "I just can't say enough about how beneficial my education background was . . . " Another participant summarized the critique on library school education in comparison to what they learned in their education related master's degree:

> All of my education coursework was really critical in preparing me to do this work. I did not get that kind of preparation in library school, and that is like a major critique of mine that I don't feel like library school focuses enough on those foundations of education and teaching that I think everybody should have to be successful either if it's online or if it's in the face-to-face environment.

Technology

Technology as a barrier was mentioned by 13 participants in 25 comments. This barrier could be any number of issues from use of technology to understanding how to select technology for instruction. One participant said it's "not just being comfortable with technology but feeling like they had the skill set to understand how to remediate any basic technology troubleshooting. I'm not talking advanced but just basic things." Another participant said "I still see shocking amounts of people struggling with this, not putting content first in front of technology. So it's not about I have this tool, what can it do? It's about what do I want to do? And what tool can get me

there? And sometimes, like, pencil and paper is a tool." A third participant described a "fear of technology" as a potential barrier:

> So not necessarily feeling comfortable with technology or being worried they're going to break things. Like I think librarians are interested in technology, and they aren't . . . adverse to technology, but I think there's a lot of fear around what if I go in there and I put something in wrong and it doesn't work and I break it?

Attitudes Toward Online Education

Another common barrier expressed by 11 participants in 34 comments was negative attitudes toward online instruction. As with attitudes towards library instruction, these attitudes may be held or expressed by various campus stakeholders including administrators, faculty, librarians, and students. However, the attitudes are similar in that interviewees report a belief that online education is somehow less effective than face-to-face instruction. One participant described this campus attitude as a "perception by some faculty and some librarians, that it just couldn't be as good, that the learning outcomes for students could not be as good as they would be face-to-face." In addition, administrators may see online education differently from a financial standpoint as one participant said that "in a lot of institutions, online education is seen as a revenue generator rather than the work of teaching our community." Another participant discussed a student's attitude that became evident during the COVID19 pandemic as many of them "didn't want to do online learning [and] have felt like this was forced upon them and then maybe they didn't have the best experience because instructors were forced into teaching online."

Discomfort with Online Learning

A related barrier was discomfort with or poor preparation for online teaching. This barrier was mentioned by 10 participants in 22 comments. One participant said they realized that

translating face-to-face instruction to online learning is “a skill set in itself . . . like: I want to achieve x thing, what are the different tools that maybe could facilitate this or the different types of online strategies, and the ways we can do it?” Another participant described it from a fear standpoint “I think [it’s] fear for people who are less experienced and maybe more veteran librarians who did not grow up like, even some Gen Xers or millennials, who have grown up online, or with the internet impacting their everyday lives. I think online learning can seem very foreign and scary.” Seven participants specifically mentioned synchronous online instruction being a barrier for new online instructors to navigate. One participant described this sentiment by saying “I've had a couple colleagues say that they feel like they've been tricked into a black void [when teaching synchronously online]. It's just like talking to the computer and they don't know what's happening [with the students] and they haven't really developed the skills to facilitate [it] yet.”

Lack of Funding for Libraries

Lack of funding was a barrier that was mentioned by 10 participants in 18 comments. One participant described this barrier by saying “funding is always a barrier - I think things are underfunded. I don't think we always get the tools or resources or technology systems that we need. I can only speak to my institution, [but] people don't understand why the library is different [from a funding standpoint].” This sentiment was echoed by various participants, especially when it came to having the resources for investing in technology for online instruction. One participant even mentioned they use personal money to fund software for video creation. Another participant mentioned that some professional development opportunities can cost upwards of $2,000 to attend and libraries do not always have funding for those opportunities. Yet another participant added that “the expectation that we as librarians should fund something that is

essentially part of our job is morally reprehensible to me." Finally, one participant mentioned that libraries may not be able to provide for staff the quiet office spaces optimal for creating videos or other media, because library space is limited and individual private offices are not always available.

Increased Workload

The amount of time available for librarians to devote to creating, teaching, or learning about online library instruction was a barrier mentioned by six participants over 15 comments. One participant summarized a majority of the comments by saying:

> Time and time and time again. Yeah, we are so stretched, we have so many other responsibilities. If you actually want to support student learning, you're going to have to put a lot more effort and energy into that. I think librarians are really dismayed when you tell them that, and they are dismayed for good reason because they don't have time to invest the energy that they need to actually make this something that's worthwhile, that's actually going to be useful to faculty, is going to be useful to students, is going to show real progress and results in a meaningful way. You're not going to get out of it what you can't put into it and a lot of us just don't have time.

Another participant indicated that the barrier of time is one of the reasons they believe burn out is so high for academic librarians. And within the barrier of not-enough-time, there is the idea that administrators or supervisors may not always understand the time it takes to create online learning materials saying that "if your administration doesn't recognize that or doesn't see how much time and energy and effort goes into each product . . . Then, we can't make reasonable

staffing choices, it's just a barrier to be able to get anything done."

COVID-19 Pandemic

Participants were not specifically asked to comment on the effects of the COVID-19 pandemic. However, 13 participants referred to effects of the pandemic on online library instruction throughout their interviews. Many of the comments pertain to hopes for the continuation of some of the new online learning modalities their libraries have adopted. On a social level, one participant said, "I think the phrase that has been the most used is 'emergency remote learning' . . . And I think one of the other things that has been wonderful in the midst of the pandemic is how much, certainly in my institution, is just how much more cooperation or collaboration there has been…" However, the most common sentiment among participants was an overall change in attitude toward online instruction in general from library colleagues:

> Prior to the pandemic, I would say there was a feeling that online was not the same as face-to-face. That online was worse. Anything that you could do face-to-face was better and everything you could do face-to-face was more authentic and that the teaching you did face-to-face just was better overall. And I think because of the pandemic removing that option, I think, has improved the mentality that you can do robust, thoughtful, intentional active learning in a Zoom room.

Competency Model

The above themes were the result of the In Vivo and axial coding cycles. Figure 1 shows the competency model that was developed based on these cycles as well as the codeweaving cycle. There were 26 competencies proposed in five different categories. The goal of the model was to provide specific direction to academic librarians while having as few competencies as possible. This model was subsequently sent to all participants to gather feedback on the validity

of the list. Participants were asked to comment on the completeness of the model, the intersection between the competencies in the list and their expert experiences, and the language used for the competencies. Of the 18 participants interviewed, 16 provided feedback. The following section explains the common feedback elements and changes made to the overall model.

1. Designing Online Instruction	1. Use a systematic instructional design process 2. Integrate learning theories into instructional design 3. Use the Principles of Multimedia Learning 4. Use a Universal Design for Learning framework 5. Convert face-to-face instruction to online 6. Integrate library instruction best practices
2. Teaching in Online Environments	1. Perform asynchronous instruction 2. Perform synchronous instruction 3. Perform hybrid instruction 4. Employ instructor presence techniques
3. Learning Technology	1. Develop a variety of web-based instructional materials 2. Use a learning management system 3. Use video conferencing software 4. Use digital accessibility rules 5. Take advantage of learner analytics for course evaluation 6. Select technology to fit specific needs 7. Use available campus technology
4. Interpersonal Communication	1. Negotiate with campus stakeholders 2. Collaborate with colleagues and campus stakeholders 3. Use campus support networks and units
5. Attitudes	1. Have a Growth Mindset 2. Have a learner centered philosophy 3. Have an open mind regarding online learning 4. Have a forward thinking mentality 5. View technology as a tool 6. Be empathetic

Figure 1 Draft of Competency Model for Online Library Instruction

Feedback on UDL and Digital Accessibility

Participants offered feedback on the competency for UDL (1.4) and digital accessibility (3.4) (see Figure 1). A common theme was the use of the word "rules" for the *Use digital accessibility rules* competency (3.4). One participant indicated that the term "rules" suggests that a bare minimum rather than all of the various best practices available when making accessible content. They suggested best practices be used. Another participant suggested "Apply principles of accessibility" as a replacement competency. However, three participants suggested a better term would be "guidelines." A final participant wondered whether digital accessibility might just

be a subset of UDL. A round of triangulation was done with participants and the consensus was that UDL provides the theoretical basis and digital accessibility provides the practical application.

Feedback on Converting Instruction

Participants wondered whether the term "convert" was the correct word for the competency 1.5, *Convert face-to-face instruction to online* (see Figure 1). Two participants said this competency is not merely about the conversion of instruction which suggests that course materials are merely digitized or given in a digital environment. Another participant said this competency left out the materials that may be born digital rather than be converted. One participant suggested the word "adapt" rather than "convert." A quick round of triangulation revealed that other participants who provided feedback on this point agreed with the word adapt.

Feedback on LMS and Video Conferencing Software

Two participants provided feedback specifically on the two specific competencies in the Learning Technology section related to the LMS (3.2) and video conferencing software (3.3) (see Figure 1). The two concerns were whether these were either too specific or even redundant and whether these were universal tools that academic librarians needed to know. A further comment suggested that because these are the two main campus technologies, combining these competencies with the competency *Use available campus technology* (3.7) may be appropriate.

Additional Competencies to Add

Some participants suggested additional competencies be added. One suggestion was to add a competency on soliciting feedback from learners in the Teaching in Online Environments section (2). Another participant suggested the addition of a competency about fostering interaction between learners be added to Teaching in Online Environments (2). A third

participant suggested *Use new/emerging instructional technologies* be added to the Learning Technology section (3) be added.

Changes to Word Choices

There were a variety of individual word choice changes that were proposed. They are as follows:

- Add "or approaches" to competency 1.1, *Use a systematic instructional design process*
- Clarify competency 3.6 to *Select Technology to fit the instructional goals and learner needs*
- Change competency 3.5 to *Consult learner analytics for course evaluation*
- Change the word "perform" in competencies 2.1 and 2.2 to "develop and deliver"
- Clarify competency 5.5 to emphasize meaning
- Change section headings to have parallel language
- Change competencies 5.5 and 5.6 to parallel language (Figure 1)

Summary

Participants provided nearly 20 hours of interview content for this study. While there were varying focuses of their answers and examples, common themes across all interviews were found. In addition, all participants agreed that, for the most part, the competencies proposed were consistent with their interviews and expert experiences with some suggestions for changes. The revised competency model and any changes will be presented in Chapter V.

Chapter V: Discussion

This study demonstrates the wide variety of competencies needed to perform online library instruction. Many of these competencies are not taught in graduate programs, requiring academic librarians to learn them on the job (Bailey, E. C., 2010; Ducas et al., 2020; Julien et al., 2018; Saunders, 2015; Shonrock & Mulder; 1993; Sproles et al., 2008; Westbrock & Fabrian, 2010). While the fact that many competencies are not taught in graduate program may pose a challenge, this study provides a blueprint for graduate programs and academic libraries when considering curriculum and professional development support for the workforce.

Research Question 1: Competency Model

The competencies derived from the expert interviews represent a wide range of knowledge, skills, and attitudes needed to successfully deliver online library instruction. While the experts indicated this list was complete based on their perspectives, it should be noted that this list may not be prescriptive but aspirational in nature. Academic librarians often work in collaborative teams or departments (Perrin & Daniel, 2017) and some competencies could be shared responsibilities or shared expertise between several members of staff, such as the roles held by the expert participants in this study. What these competencies do represent is an intentional strategy for the future design, development, and evaluation of online library instruction.

Designing Online Instruction

The foundation of successful online instruction, as with any instruction, is the planning process. Planning is a common element in systematic instructional design processes (Curry et al., 2020) and it was clear the participants felt it was important to mention repeatedly. Not only did they reference "instructional design" in general, but they focused on specific elements of the design process, such as needs assessments, learner analysis, setting learning goals and objectives,

and the iterative processes. Observations and thoughts of study participants regarding this competency are consistent with those mentioned in the Roles and Strengths for Teaching Librarians (American Library Association, 2017) which has a role devoted to *Instructional Design*. In the codeweaving cycle, it was evident how these elements all worked together to form one competency. However, decisions had to be made on other sub-themes as to whether to keep them as their own themes or to fold them into the larger systematic instructional design process. It was decided that the rest of the competencies in this section receive their own categories based on the specific phrasing used by the participants and the importance some of these competencies have when it comes to online learning.

The competencies relating to learning theory, Principles of Multimedia Learning, and Universal Design for Learning (UDL) framework are elements that are integrated into the instructional design process. They all help provide the theoretical frameworks the instructor needs to design sound instruction. There are many instructional theories that can be drawn on to support online instruction that also support face-to-face instruction as well. These include theories on how children and adults learn, such as pedagogy and andragogy, or motivation theories of learning that help provide students with the reasons to learn. Principles of Multimedia Learning (Mayer, 2009) provide evidence-based guidance on designing learning that will support learning, not divide attention, and scaffold a student's learning to maximize their retention in digital formats. And the UDL framework (Gordon, Meyer, & Rose, 2016) provides guidance on making instructional decisions that will meet the needs of all learners starting at the planning process, rather than attempting to make individual accommodations for learners after instruction is created. While there is likely overlap between each of these three competencies and between these and the systematic design process, naming them specifically provides more direction on

knowledge areas that are commonly associated with online learning.

Adapting face-to-face instruction for online was a difficult competency to keep as a single competency as it could easily be an aspect of the instructional design process. However, during the interviews, multiple participants discussed the importance of not just delivering the same lesson plan for face-to-face instruction in an online space. They described the various design concerns that need to be addressed and used the previous competencies to specify those adaptations. Due to this delineation, it was decided to keep this competency separate to indicate the importance of this ability as separate from designing new instruction.

The final competency, relating to using library instruction best practices, had not been hypothesized by the researcher. However, as previously stated, library instruction differs significantly from most of the instruction done in higher education. This competency not only asks academic librarians to integrate things like the ACRL Framework into their curriculum but to be aware of the literature in the field. Academic librarians have published work on digital badges and microcredentials, tutorials, synchronous instruction, and more (Baer; 2021; Befus & Byrne, 2011; George & Martin, 2004; Greer, 2016; Julien et al., 2018; Lo & Dale, 2009; Moran, & Mulvihill, 2017; Stiwinter, 2013; Wray & Mulvihill, 2018; York & Vance, 2009). In addition, this competency suggests a fluency in academic library specific instruction practices such as the one-shot and the potential pitfalls that should be addressed in the planning process.

Model Changes. Competency 1.5 was updated to reflect participant feedback on the verb "convert" to more accurately portray the nature of this competency. The competency now reads *Adapt face-to-face instruction to online*.

Teaching in Online Environments

Academic librarians have taught in a variety of online instructional formats (Baer; 2021;

Befus & Byrne, 2011; George & Martin, 2004; Greer, 2016; Julien et al., 2018; Lo & Dale, 2009; Moran, & Mulvihill, 2017; Stiwinter, 2013; Wray & Mulvihill, 2018; York & Vance, 2009). Previous competencies for academic librarians have focused on face-to-face instruction (American Library Association, 2017; Shank & Bell, 2011) and while there are similarities, instructional methods must be altered to fit an online environment (Clark & Mayer, 2016). While participants focused on the online instruction they performed the most, the themes were similar, breaking down into abilities related to synchronous, asynchronous, and hybrid instruction. Hybrid instruction consisted of challenges related to both synchronous and asynchronous instruction, with the added element of connecting the online portion of the course to the face-to-face portion. The final competency (2.4) in this category relates to instructor presence in online courses. This competency section adds online specific practices to the teacher practices detailed in the *Strength and Roles for Teacher Librarians* document (American Library Association, 2017)

In a synchronous face-to-face environment, managing a classroom requires paying attention to the learners while presenting to guiding discussion. Similarly, this instructional multitasking is done in an online environment but, instead, instructors must balance multiple windows, often a shared screen and a chat window. They may also be attempting to find alternative forms of engagement (Kahn et al., 2017; Thurmond & Wambach, 2004). However, a main challenge is that students may or may not have their cameras on and so the usual modes of student feedback through body language may be unavailable to instructors. The camera on/off debate was a contentious subject during the COVID-19 pandemic with research arguing both sides while attempting to find equitable and inclusive solutions (Castelli & Sarvary, 2021). This requires a change in mindset and approach to instructional feedback, requiring the acquisition of

new knowledge, skills, and attitudes to succeed in this modality.

Most librarians have engaged in various types of asynchronous instruction while performing their reference duties via virtual services (Oakleaf & VanScoy, 2010). However, providing feedback in an online asynchronous learning environment requires a change in approach as there is little opportunity to engage in back-and-forth conversation with students regarding their work. It is necessary for instructors to understand types of asynchronous feedback and ways to reduce technological burdens (Pyke & Sherlock, 2010). In this theme, one participant spoke about the challenges of delivering feedback to large enrollment online courses and the difficulty the academic librarians they worked with had in changing their approach. This competency is as much about learning to use technology tools to provide the instruction as it is about integrating good pedagogical practices into the act of instruction.

The final competency in this section (2.4), *Employ instructor presence techniques*, was used to reflect a wide range of instructor abilities described by the participants in this study. However, it was noted that the wording may not be specific enough or even confusing. Other participants noted that they felt competencies were missing from this section regarding interaction with students, specifically in regard to facilitating an overall classroom experience as well as encouraging collaboration with students. Upon reflecting on these concepts, it was determined that participants were speaking about the *Community of Inquiry* framework in higher education online learning. The Community of Inquiry (CoI) framework refers to three overlapping educational elements, social presence, cognitive presence, and teaching presence (Garrison, et al., 1999). These elements work together in an online classroom in higher education to achieve an optimal education experience. Garrison et al. (1999) regard these elements as instructional devices that the instructor must be intentional about creating for the students to be

able to engage in all three areas.

Model Changes. Competencies 2.1, 2.2, and 2.3 were updated to reflect feedback on the verb "perform." Each competency now uses the verb "deliver." Competency 2.4 was changed from *Employ instructor presence techniques* to *Use a Community of Inquiry framework.*

Learning Technology

Online library instruction is not possible without technology. Participants spoke about a wide range of specific technologies but also navigating their choice and use. The first competency (3.1) was used as a catchall for all of the various materials mentioned by participants. It is all-inclusive of the technology currently available for developing materials, as well as technology that may be available in the future. The future aspect, which dovetails with having a future-thinking mindset, is especially important as technology changes rapidly and the technologies that are popular today may not be popular next year, or worse, may not even work. The participants in this study were adamant that part of dealing with technology was employing that Growth Mindset to be flexible and adaptable, especially in the face of technology hiccups and problems. While this competency is broad, the following two competencies deal with specific campus learning technology.

Two mainstay campus learning technologies on any campus are the LMS and video conferencing software. It is likely these technologies will be superseded by new derivatives in the future, but the main concept of the delivery of online learning and communication at a distance will remain necessary. In addition, each campus selects its own vendors so there are no specific technologies mentioned. The COVID-19 pandemic clearly illustrated the importance of these systems as campuses worked to increase access, storage, and availability of these technologies (Moore et al., 2021). In addition to using a LMS, competency 3.5, using learning

analytics for evaluative purposes dovetails as one of the primary places to gather these analytics. However, academic librarians should know what analytics are available for any tool they are using and how they could be used to evaluate learning. In addition, as indicated by two participants, academic librarians may wish to carefully review data policies of any tools used to collect learning analytics to uphold library best practices in user data privacy.

The competency related to digital accessibility met challenges with participants during the validation processes. It was decided that while it is the physical embodiment of using a UDL Framework, it has very specific knowledge and skills associated with it. It should be noted that the Web Accessibility Initiative of the World Wide Web Consortium is constantly updating and revising guidelines (World Wide Web Consortium, 2018) making it difficult to keep up with some standards. However, digital accessibility is a legal requirement and one that academic librarians are familiar with due to the purchasing of course materials (Peacock & Vecchione, 2020), so it is within reason to expect instructors to have some level of proficiency with these guidelines.

While the ability to use technology to create and deliver instructional materials is essential, the selection of the technology is also important. A common reminder in instructional design texts is to select the technology that is appropriate for the learning need (Merrill & Wilson, 2007). Several participants mentioned this concept in slightly different terms: from meeting students in the technology they are used to, to knowing when to pull in a new technology to best fit the learners' needs. This concept can be difficult for novice instructors as it is easy to be enticed by the glitz and glam of new tools. However, knowledge of learning theory suggests that introducing new technology to learners in addition to new content can increase cognitive load and decrease learning potential. By combining these two competencies,

technology can be used effectively. As with designing and teaching, choices in technology should be intentional and based on learner needs.

Model Changes. Based on feedback from the participants, competencies 3.2 and 3.3 were combined with competency 3.7 to form the following competency: *Use available campus technology (ex. LMS, Video Conferencing Software)*. Competency 3.4 was changed to reflect participant concerns with the word "rules" to *Use digital accessibility guidelines*. Competency 3.5 was updated to reflect a more streamlined verb use to *Consult learner analytics for course evaluation*. Competency 3.6 was updated for clarity to *Select Technology to fit the instructional goals and learner needs*.

Interpersonal Communication

Interpersonal communication is an important ability in libraries as librarians are often not teaching their own courses, rather they are collaborating with teaching faculty and other campus stakeholders (Kissel et al., 2016). These competencies mirror strengths contained in the Roles and Strengths of Teacher Librarians document (American Library Association, 2017) in the roles of being an advocate, coordinator, leader, and teaching partner. While these are universal in library instruction, they become increasingly important in online library instruction given the added workload, planning, and expertise required to prepare this instruction. One participant's story of changing an entire face-to-face first-year experience approach noted the change in staff time. The new hybrid approach delivered content via online modules and the face-to-face session was devoted to a hands-on work session where the librarian could provide individualized student support where needed. This change is also shown in the work of other academic librarians with descriptions of the large-scale negotiation that took place to support online library instruction and the collaboration that took place within the library and with stakeholders

(O'Neill, J. L., 2017; Peacock et al., 2020; Rimland & Raish, 2018; Wray & Mulvill, 2018). Advocating for instruction outside of the one-shot library instruction model could also benefit from these abilities (Bowles-Terry & Donovan, 2016; La Plante, 2013).

It is clear that when advocating for learner needs and instructional formats, interpersonal skills are invaluable for the librarian instructor. (Kissel et al., 2016). Furthermore, given the barriers described by participants in getting access to campus technology, the interpersonal skills competency can help break down such barriers. One participant also mentioned they used a campus assessment office to support their assessment and evaluation efforts where they felt they were not an expert. Interpersonal skills can help academic librarians obtain support for areas in which they are deficient and over time, using these support networks could help increase their overall proficiency.

Attitudes

Attitudes were an important holistic element to creating a set of competencies. Attitudes can help or hinder many processes, but especially new processes that may require discomfort and effort (Dweck, 2016). In the beginning of the interviews, some participants struggled to put names to attitudes they may have that have helped in their work. However, as they shared stories from their work and spoke about barriers, their attitudes became clearer. In many cases, interpretation was necessary to help classify similar phrasing of attitudes into categories, which is why validation with the participants was so important for clarifying these competencies.

Growth Mindset was a phrase that was used by a single participant, but it became evident during the classification process that it could be used for many of the comments made. And while Growth Mindset was originally a term used to describe a phenomenon in children, it has become a term used for adults, and relating to faculty development (Boyd, 2014). The concept of

overcoming failure and learning from it was prominent in the interviews, which is unsurprising due to evaluation and iteration being an element of instructional design (Stefaniak, 2021). Other competencies that are mainstays of education included the competencies related to learner-centered mindset and empathy.

The two competencies that were somewhat unexpected were the competencies related to being forward thinking (5.4) and the attitude toward technology as a tool (5.5). These attitudes were most evident as participants spoke about negative instruction experiences. Their reflections on past experiences exemplified their Growth Mindset but specifically, they detailed reasons why they thought things had gone wrong in their planning process where they did not think ahead. In addition, these same experiences showed events where they placed the technology before the instruction, rather than seeing the technology as a tool to support their instructional goals. This concept is described by Spector (2012), reminding designers that technology should be aligned to the users, learning goals, and learning activities (p. 124).

The final attitudinal competency to discuss relates specifically to online instruction (5.4). As with students, having a negative attitude toward a modality can affect the learning process (Brooks, 2003). This is not to say that academic librarians should view online library instruction as the best method or only method of library instruction for the future. Rather, as one participant said, they should view online instruction as part of a suite of options available to them to select from based on instructional need. Evaluating the future success of online learning will continue to be an important part of higher education and it will be imperative that institutions use quality markers of excellence (Moore et al., 2021).

Model Changes. Competency 5.5 was updated to *View technology as an instructional tool* to assist with clarity.

Updated Competency Model

Figure 2 shows the updated competency model based on participant feedback.

1. Designing Online Instruction	1. Use a systematic instructional design process 2. Integrate learning theories into instructional design 3. Use the Principles of Multimedia Learning 4. Use the Universal Design for Learning framework 5. Adapt face-to-face instruction to online 6. Integrate library instruction best practices
2. Teaching in Online Environments	1. Deliver asynchronous instruction 2. Deliver synchronous instruction 3. Deliver hybrid instruction 4. Use a Community of Inquiry framework
3. Learning Technology	1. Develop a variety of web-based instructional materials 2. Use available campus technology (e.g. LMS, video conferencing software) 3. Use digital accessibility guidelines 4. Consult learner analytics for course evaluation 5. Select Technology to fit the instructional goals and learner needs
4. Interpersonal Communication	1. Negotiate with campus stakeholders 2. Collaborate with colleagues and campus stakeholders 3. Use campus support networks and units
5. Attitudes	1. Have a Growth Mindset 2. Have a learner centered philosophy 3. Have an open mind regarding online learning 4. Have a forward thinking mentality 5. View technology as a tool 6. Be empathetic

Figure 2 Updated Competency Model for Online Library Instruction

Research Question 2: Barriers

The second goal of this study was to identify potential barriers that might prevent academic librarians from being successful in providing effective online library instruction. Some participants initially struggled with defining knowledge, skills, and attitudes in their work, however, participants were very eager to discuss barriers to being successful online library instruction. Most participants spoke at length about barriers without much prompting and

without needing to clarify statements made. This suggests many of the barriers discussed are likely deeply ingrained in academic libraries and have yet to be overcome. Figure 3 shows the barriers identified in this study.

1. Attitudes toward library instruction
2. Attitudes toward online learning
3. Job preparation
4. Technology
5. Discomfort with online learning
6. Lack of funding for libraries
7. Increase workload

Figure 3 Barriers to Online Library Instruction

Knowledge and Skills

It was clear during the interviews that the participants viewed the field of academic librarianship as under-prepared to meet the needs of any learner, but specifically online learners. A number of authors have pointed out the lack of preparation in library schools for instruction related activities in academic libraries (Ducas et al., 2020; Julien, 2018; Saunders, 2015; Shonrock & Mulder; 1993; Sproles et al., 2008; Westbrock & Fabrian, 2010). Many of these articles point to general instruction practices related to face-to-face instruction, however, little is said about preparation for online library instruction. This phenomenon was clearly indicated by participants who stressed that it is not just a lack of preparation for instruction in programs but a systemic discomfort with online learning for many of their colleagues. It is clear from the previous studies, mentioned above, that basic foundations of pedagogy and related learning theories is not a requirement in the Library Science curriculum.

Without adequate preparation, it is unsurprising that another barrier mentioned by participants was use of technology. Participants mentioned that colleagues were fearful of

making mistakes or lacked understanding regarding the extent of what they could do with technology, not to mention their limited theoretical knowledge of technology use. While many librarians who have entered the field in the past two decades report growing up with technology, there are still many librarians in the field who did not and still express discomfort with technology (Emanuel, 2013). One participant said they felt this barrier was more of an issue of exposure and practice, rather than an inability to learn. This indicates academic librarians may need to be provided with the additional time and space to experiment and learn new instructional technologies.

That being said, a related barrier was workload for academic librarians. Academic librarians are often required to wear multiple hats. Librarians must be subject specialists, reference specialists, collection specialists, and expert teachers (Ducas, 2020; Julian et al., 2018; Peacock & Wurm, 2013). It is probably unreasonable to assume academic librarians will have time to complete all of those tasks and become proficient in new competencies. There is an argument here for library administrators to carefully review their organizational structures to allow employees to have the space to engage in the acquisition of new abilities based on future needs, such as online learning. It was interesting to see that the twenty-seven participants originally contacted for this survey had all worked as instructional design and technology specialists for their libraries, helping support the work of their colleagues with this special skill set.

Funding in academic libraries can become a barrier for academic librarians as it can impact compensation, workload, and work environment, elements that can lead to turnover in academic libraries (Heady et al., 2020). Funding difficulties can lead to a multitude of issues such as purchasing technology (software and hardware), allowing employees to engage in

potentially expensive professional development, allowing release time to learn and experiment, and even the ability to hire instructional design and technology subject experts. If the role of academic librarians has changed as Julien et al. (2018) and Ducas et al. (2020) have found, supporting this change financially may become an increasingly urgent barrier for library administrations to deal with.

Attitudes

As previously mentioned, attitudes can play a pivotal role in the success of online library instruction. Negative attitudes toward the use of online education, including its inferiority to face-to-face instruction (Bunk et al., 2015; Moore, 2005; Walters et al., 2017), can pose a significant barrier to academic librarians who are advocating for online options or when a natural disaster such as a pandemic disrupts their ability to deliver face-to-face instruction. Similarly, attitudes towards library instruction can play a role in how an academic librarian is regarded when working toward implementing successful instruction (Creaser & Spezi, 2013). Participants mentioned needing access to the LMS where students are, being able to review course assignments to align instruction goals and negotiate well scaffolded instruction with course faculty. If library instruction is poorly regarded or misunderstood, these tasks become infinitely more difficult, which lowers the quality of instruction students will likely receive.

COVID-19

The interviews for this study were conducted in the Summer of 2021. Participants had experienced a year and a half of working within the constraints posed by the COVID-19. Thus, it was unsurprising to find many of the participants remarking about how the pandemic affected elements of their discussions. Participants spoke about many positive impacts, including hopes for continued support for online library instruction, increased collaboration across their library

and institution, and shifts in attitude toward online instruction in general. In Moore et al. (2021) the authors note that despite some positive experiences during the pandemic, there is still a large portion of higher education policy and decision makers who are willing to push the narrative that "online learning is inferior to in-person education."

Implications for Competency Model

The results of this study suggest there may be significant gaps in the ability of academic librarians to be successful in providing online library instruction. Further research on a national level is necessary to determine how and why these gaps exist. In addition, the competencies put forth in this dissertation require further analysis to determine whether academic librarians view said competencies as meeting their needs as instructors. Further research or analysis is also needed to determine whether the competencies suggested in this research project are achievable for academic librarians, and will help advance the profession. Further research and analysis could lead to refinement of the competencies before they are adopted by academic librarians. The competencies presented represent a clear path forward for academic librarians, academic libraries, and library science programs to meet future online library instruction needs.

Professional Development and Growth

The competencies presented were developed by experts with advanced knowledge and experience in teaching and learning with the express purpose of helping guide the development and growth of future academic librarians. Many individual librarians may find it difficult to achieve a mastery level in each competence described, due to the advanced nature of some of the competencies, specifically in the areas of designing instruction and technology. One practical method for academic libraries to increase competency among faculty is to promote shared responsibility among colleagues in functional groups or teaching departments; in this way

individual faculty do not have to have mastery level competency in all areas, but a group of faculty, working together creatively, share a functional, collaborative level of mastery that benefits all. In addition, the hiring of librarians with advanced education in these areas, such as the experts involved in this study, would provide a mastery level of competence and leadership in these areas. This is particularly true if academic librarians have little access to campus support departments in online learning, instructional design, or instructional technology. However, it should be noted that if teaching and learning is listed as a primary function of an academic librarian's position, a basic level of competency in all these areas should be sought.

These competencies are also not suggested as a one-size-fits-all model for all online library instruction. As noted, academic librarians are working to change the format of library instruction to better meet pedagogical needs of students (Badke, 2008; Jardin et al., 2018; la Plante, 2013; Mayer & Bowles-Terry, 2013; Pashia & Critten, 2019; Walker & Whitver; 2020; Webber & Johnston, 2000). Therefore, the competencies required of academic librarians should be matched to the pedagogical needs of the students. These competencies represent requirements designed to meet known needs of current online library instruction formats.

However, academic librarians currently teaching full-credit semester courses may find they need additional competence in other areas, such as in the design of assessments, managing course progression over many weeks, and student mentorship. Fortunately, the organizations mentioned in the literature review provide competencies that specifically address for credit courses and could be used in conjunction with this model.

Evaluation of Instruction

Competencies are used in a performance-based capacity and having a reason to become competent in a certain area can depend on many factors, one being performance evaluations. As

noted in the literature review, there is not much evidence of academic libraries using competencies to evaluate librarians and their ability to fulfill their teaching and learning responsibilities (Bryan et al., 2018). Bryan et al. (2018) used the *Roles and Strength of Teaching Librarians* document to draft evaluation criteria for their institution, however, this does not seem to be a universal practice in academic libraries.

The competencies presented in this research represent a model for academic library administrations that could be used to: (1) support the learning and growth of their employees and (2) as a method to evaluate how librarians are meeting student learning expectations in online instruction. It would be important for any library system that seeks to adopt the use of competencies to follow proper governance channels and obtain buy-in from the librarians involved. Further research could be done to determine a measure of the quality of online library instruction or the long-term impact of this instruction on students beyond a four-year degree.

Professional Adoption

Adoption of the competencies recommended by this research project by professional organizations may be challenging due to the current approach to competency in instruction put forward by the *Roles and Strength of Teaching Librarians* document. The authors describe their approach by saying they wished to provide a basic framework for the broad roles of the teacher librarian rather than a specific list of (American Library Association, 2017). And, in truth, there are many overlaps between the competencies presented in this research and the various broadly defined categories in their document. The competencies in this research are both specific enough for guidance and broad enough for interpretation and agility as online learning progresses.

However, since other highly regarded teaching and learning associations have specifically defined competencies for a broad role such as online instruction in higher education,

it does not seem unreasonable to assume the national association for academic librarians could also better define its professional expectations. If the professional association would define specific expectations of its members, that would help ensure that library science programs provide the curriculum to meet those expectations and, further, that library administrations provide opportunity for employees to grow in those areas.

Library Science Curriculum

Changing curriculum in higher education can be quite challenging. Achieving any curriculum usually requires both state and university stakeholders coming to consensus on the requirements involved and such agreements, once made, are not easily modified. However, it would behoove library science programs to carefully monitor all aspects of the library science profession to ensure the needs of students for their future employment are met. As noted in the literature review, academic librarians still claim they are required to obtain instruction skills on the job via professional development opportunities and best practice literature. By using competencies such as those recommended here, arguments can be made for curricular change that are hard to dispute when ratified by an accrediting body. Library Science programs may also wish to conduct their own needs assessments with alumni on a routine basis to gauge the degree to which their programs are meeting the needs of their graduates in their careers.

Implications for Barriers

The barriers identified in this research are not insignificant and pose a substantial hurdle for success in online library instruction in academic libraries. However, viewing these barriers as catalysts for change in academic libraries, library science programs, and associations is part of having a Growth Mindset. Change across many institutions in a country as large as the United States is a process that is likely to be slow and requires the strategic combination of stakeholders at all levels to be successful. Studies which produce recommended competencies such as those

presented here form a base to guide future directions.

Academic Librarians

This study shows that there are at least 18 academic librarians passionate about improving the quality of online library instruction, and there are likely many more. These individuals are already embedded in organizations where they can work to change the negative attitudes faculty and administrators often have about online learning. At the same time they can promote, in their organizations, that colleagues be provided with the time and resources to provide better online library instruction. However, the barriers described by the experts make it evident that academic librarians have many demands on their time.

Not only are librarians asked to advocate for library instruction, but they must also advocate for online learning. Moore et al. (2021) remark on the poor quality of research conducted on online learning during the past year, noting how difficult it is to change minds with poor data. To that end, academic librarians conducting research on online library instruction should endeavor to produce high quality empirical research on their instruction in order to be able to advocate for online library instruction using data. In addition, academic librarians should continue to study where the future of online library instruction leads and how these negative perceptions of this format will be overcome. While a return to "normal" is the mantra at many universities, it is important to ask who is excluded in "normal" or traditional instruction (Moore et al., 2021). As a number of participants pointed out in this study, they were able to increase access to library instruction across campus using new online options during COVID-19. Online library instruction is not the answer to all of the library instruction woes in higher education, but it should not be discounted as a viable instructional modality.

Academic Library Administrations

In addition, to support online library instruction on a national level, academic library administrations are responsible for ensuring that the teaching and learning mission of the library and institution is fulfilled. Online library instruction is one of the methods of achieving this and administrators should become familiar with the benefits this format has to offer. Library administrations should also closely examine their organizational needs and determine ways to help librarians obtain the skills necessary to perform these functions by removing the barriers of limited time and resources. At institutions with current online library offerings, library leadership should be promoting the online offerings to campus stakeholders as a viable option for instruction at any level of the curriculum. And finally, the hiring of skilled professionals in instructional design, technology, and curriculum should be considered in academic libraries that serve large student bodies. These individuals should not be seen as merely an employee to carry out all the responsibilities relating to online library instruction but rather as someone to help others increase their competence, provide project management and quality assurance, and provide strategic leadership in future library instruction endeavors.

Library Science Programs

It is evident that Library Science programs have historically produced a barrier for academic librarians and their success in online library instruction by not incorporating online instruction as a core component of the curriculum, but rather as an elective. The role of the academic librarian has changed, and Library Science programs are not always changing to meet the professional skill sets their students need to be successful practitioners. Placing this component as a core curricular topic in master's programs would reduce the need for academic librarians to spend time learning these new skills on their own once employed. It would also

make them more marketable candidates for the instruction responsibilities most academic librarians hold. Further research could be conducted to analyze the financial implications of having a more skilled workforce for academic libraries. While putting pressure on Library Science programs to modify curriculum may solve the knowledge and skill dilemma, there is no mistaking the attitude barriers that pose a significant hurdle for online library instruction.

Library Associations

However, national organizations, such as the Association for College and Research Libraries can also work to give online library instruction a more prominent feature. Such work could include continuing to provide broad access to exemplary research from academic libraries in the areas of online library instruction. In addition, continuing to have virtual or hybrid ACRL conferences can not only cut down on travel costs but also increase the ability of more people to attend. In addition, such virtual conferences can also provide opportunities for many to learn from those with experience in online spaces during presentations, breakouts, and networking.

Limitations

As with all studies, there are some limitations to what can be concluded from the results presented. The purposeful sampling for this study required a very narrow set of criteria, therefore the population was very small. A small population can potentially introduce bias (Creswell & Creswell, 2018). The bias in this study was intentionally selected for, as the experts interviewed all had very similar educational backgrounds and work experience, with the result that their ideas, biases, and modes of expression were quite homogenous. It should be noted that while this was the desired outcome for a competency-based needs assessment, different populations of academic librarians would likely produce varied outcomes. A further limitation to this study is the competency model itself. The model presented in this study has only been refined by the

specific population who helped create it. In addition, it was beyond the scope of this study to determine whether the competencies provided reflect the perceptions of academic librarians who do not hold the advanced education the study population did. It is possible that further refinement of the model could take place during a future study where the gap analysis was conducted. While these limitations exist, this study does provide a foundation for the next phase of a competency-based needs assessment.

Conclusions

Academic librarians' roles and responsibilities have evolved over time (Cox & Corrall, 2013; la Plante, 2013) with instruction becoming a prominent element in their work. Some academic librarians have worked extensively in online library instruction (Baer; 2021; Befus & Byrne, 2011; George & Martin, 2004; Greer, 2016; Julien et al., 2018; Lo & Dale, 2009; Moran, & Mulvihill, 2017; Stiwinter, 2013; Wray & Mulvihill, 2018; York & Vance, 2009) showing the breadth and depth of what libraries can offer. Unfortunately, many librarians are deficient in the skills necessary to become successful instructors (Waler, 2006), particularly in online environments. This study provides a competency model to provide academic librarians with a blueprint to help them identify potential gaps in their knowledge, skills, and attitudes: gaps which should be bridged for them to be successful in providing online library instruction. And while barriers exist that may make it difficult for librarians to be successful, identifying these barriers provides an opportunity to advocate for needed changes to structures, systems, and attitudes. And while online learning will continue to evolve, the COVID-19 pandemic has shown academic libraries the role this modality plays in supporting online library instruction efforts in higher education.

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Appendix

Number	Question Text
1	Describe your librarian responsibilities with regard to providing online library instruction?
2	In effective online instruction, there are a few elements to consider: Knowledge, skills, and attitudes. Consider your responsibilities in providing online library instruction:
2A	Describe specific knowledge you need to possess to accomplish these responsibilities.
2B	Describe specific skills you need to possess to accomplish these responsibilities.
2C	Describe specific attitudes you need to possess to accomplish these responsibilities.
3	Describe any additional knowledge, skills, and attitudes you need to accomplish these responsibilities? [probe]
4	Give an example of a specific time in the last year when you (or a colleague you observed) was successful in providing online library instruction? Begin with the context of this event.
4A	Context (subject, level, etc.)
4AI	Who was this instruction for?
4AII	When was this instruction provided?
4AIII	Why were you providing this instruction?
4AIV	In what format did you provide this instruction?
4B	What tools or actions did you use in your example?
4BI	Was learning theory used to provide this instruction? What theory?
4BII	What technology did you use to provide this instruction?
4BIII	How did you evaluate this instruction?
4BIV	What skills did you use that made this instruction successful?
4C	Did this successful example have an impact on your attitudes on how you meet your responsibilities for online library instruction?
4CI	Did you have any preexisting attitudes that affect how you judged this example?
4D	What significance does this event have for you as an instructor/students/library or institution?
4DI	What pedagogical lessons did you learn from this event?
4DII	Why do you think this instruction was successful?
5	Give an example of a specific time in the last year when you (or a colleague you observed) was unsuccessful in providing online library instruction? Begin with the context of this event
5A	Context (subject, level, etc.)
5AI	Who was this instruction for?

5AII	When was this instruction provided?
5AIII	Why were you providing this instruction?
5AIV	In what format did you provide this instruction?
5B	What tools or actions did you use in your example?
5BI	Was learning theory used to provide this instruction? What theory?
5BII	What technology did you use to provide this instruction?
5BIII	How did you evaluate this instruction?
5BIV	What skills did you use that made this instruction successful?
5C	Did this unsuccessful example have an impact on your attitudes on how you meet your responsibilities for online library instruction?
5CI	Did you have any preexisting attitudes that affect how you judged this example?
5D	What significance does this event have for you as an instructor/students/library or institution?
5DI	What pedagogical lessons did you learn from this event?
5DII	Why do you think this instruction was unsuccessful?
6	Describe any barriers you believe exist that would make it difficult for academic librarians to be successful in providing online library instruction. [probe: organizational culture, structure, attitudes (admin/faculty/student)]