

ON THE OTHER SIDE OF THE REFERENCE DESK:
EXPLORING UNDERGRADUATES' INFORMATION
SEARCH MEDIATION EXPERIENCES THROUGH
THE ACRL FRAMEWORK

By

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DEDICATION

This dissertation is dedicated to

Melissa Montag (1975-2012), whose memory connects me with my past,

and

Zak Mortensen, whose new life gives me hope for the future.

This work would be meaningless without the lessons you taught me about courage,
friendship and joy.

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Abstract: Information seeking, a key aspect of information literacy, is relevant to student academic success as well as to leadership, organizational and public policy issues within higher education. Although librarians contend that students should consult formal mediators for help during an information search, students are much more likely to prefer consulting what are defined in the literature as informal mediators. This contradiction suggests the current literature of information seeking may not fully depict the aspects of search mediation that are actually the most important to student information seekers.

Purpose and Questions: The purpose of my study was to explore lower-division undergraduates' thoughts, feelings, and actions as they engage in and reflect on their information search mediation encounters over the course of an information search process. My study was guided by two central questions:

1. What are the characteristics of information search mediation encounters as experienced by lower-division undergraduate students?
2. How do students use search mediation encounters to navigate the information search process?

Methods and Theory: To explore these questions, I employed Stake's (2006) multiple case study methodology. Each student's assignment-related experiences of information search mediation and information seeking were considered a case for the purposes of this study. After analyzing individual cases in isolation for key findings, I considered them as a set to identify cross-case assertions that describe the essence of the topic under investigation. I then examined and discussed the cross-case through the lens of the Association of College and Research Libraries' (ACRL) Framework for Information Literacy for Higher Education, the primary theoretical framework for the study.

Findings: Six cross-case findings emerged from the data. These findings describe aspects of mediator selection, the mediation encounter, the role of information search mediation in the information search process, the influence of lessons learned via mediation on the final research assignment, and the ways that mediation encounters influenced later information searches, as well as search mediation as a whole. These provocative findings both support and problematize the ACRL Framework for Information Literacy, and have important implications for information literacy theory, research, and practice.

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CHAPTER I

INTRODUCTION

Over the course of the semester-long narrative inquiry (S. Clark, 2014) that inspired this study, “Ashley” shared a great deal with me about her experiences seeking information for course-related research papers. Multiple personal crises and a lack of preparedness left her overwhelmed and “blocked” when it came time to seek information for class assignments. In our first meeting, Ashley and I talked at length about the anxiety that seemed to render her unable to ask formal mediators (Kuhlthau, 2004) such as librarians for information search help. Ashley looked down at the battered table in the coffee bar where we sat, sighed, and said, “I’m just chicken” (S. Clark, 2014, p. 68).

However, when we met for our final conversation at the end of the semester, Ashley seemed transformed. Ashley and her daughters had moved in with her new boyfriend. She stated he was the first and only person who was helpful with her school work, and supportive of her goals. Ashley seemed filled with optimism, and she stated it was because of her new relationship. She described her new partner, who Kuhlthau (2004) would call an informal mediator, as smart, supportive and ready to help her learn tasks vital to writing a college research paper. That said, Ashley stated she hadn’t learned much about information seeking during the semester because she was still scared to ask

for help from professionals who she knew could help her learn the skills at which she and her partner were “no good” (S. Clark, 2014, p. 70).

Unfortunately, Ashley’s choices and anxieties are all too familiar to instruction and reference librarians who struggle to make the information search process less intimidating and more productive for students. Academic librarians, while vocal and passionate supporters of the role of formal information-seeking mediation in the development of information literacy skills, are less likely to perceive informal search mediation encounters from the same vantage point as students. Instruction librarians have valid reasons to believe in the value of their assistance to students. However, students may have equally logical reasons for preferring to consult a friend or family member in times of search uncertainty. By transcending the binary formal/informal model of search mediation and exploring all experiences of search mediation as perceived and constructed by information seekers themselves, this qualitative study attempted to provide new insights into information seeking as experienced on the other side of the reference desk.

Students’ skills in information seeking are a key part of the information literacy abilities that students should acquire in order to succeed both during and after college. These skills are typically learned and refined in part through search mediation encounters. According to the American Library Association (ALA), information literacy is a set of skills that enables people to "recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information" (1989). In 2000, the Association of College and Research Libraries (ACRL), a division of ALA, produced a set of six standards for information literacy programs in academic libraries. According to the standards, all information literate students should be able to define their

information needs, successfully locate information, evaluate sources, apply them toward a larger purpose and use information in a legally and ethically appropriate manner (Association of College and Research Libraries, 2000).

Given vast changes in pedagogical theory and practice in the last 15 years, the ACRL commissioned a task force to revise the 2000 standards into a Framework that would be relevant to current needs of information seekers and instruction librarians (Association of College and Research Libraries, 2014a, 2014b, 2014c, 2015). The Framework as completed in 2015 and fully adopted by the ACRL in 2016 consists of six threshold concepts that are integral to becoming an information literate learner. (Meyer & Land, 2003). According to Meyer and Land, "a threshold concept can be considered as akin to a portal, opening up a new and previously inaccessible way of thinking about something. It represents a transformed way of understanding, or interpreting, or viewing something without which the learner cannot progress" (2003, p. 1) The Framework for Information Literacy (ACRL, 2015) contends that these concepts, once understood by an information seeker, will transform the ways in which he or she looks for, engage with, and synthesize information. These concepts are further discussed and critiqued in chapter 2 and form the theoretical framework for this study's data analysis.

This dissertation study explored information search mediation experiences similar to those Ashley described. Such a study may help researchers and practitioners to better understand what happens in a search mediation encounter from the perspective of an undergraduate student, and how these experiences ripple through the information search process as a whole. This chapter will open with a description of the scholarly and professional background for the study, focusing particularly on the role of information

literacy in academic achievement and higher education administration. After introducing the research problem and its significance, the chapter will include a brief summary of the methodology, definitions of key terms, and the boundaries of the study.

Background of the Study

Although college administrators have long valued the resources and services of a strong academic library (Grimes, 1993; Lynch et al., 2007), many are unclear about the library's role in a changing information environment. Oakleaf (2010) argued that librarians must identify and promote the value that libraries provide to universities today, and search for ways to become even more valuable in the future (p. 140). According to Oakleaf, information literacy instruction is a particularly relevant library service for a 21st century information environment, and both library and institutional leaders should evaluate its effectiveness accordingly.

Information Literacy and Academic Achievement in the Context of Higher Education Administration

Instruments such as the National Survey of Student Engagement (NSSE) include questions designed to assess information literacy skills as a key part of overall student learning (National Survey of Student Engagement, 2009; Mark & Boruff-Jones, 2003). In addition to its inclusion in institutional assessment instruments such as NSSE, administrators and accreditors alike consider information literacy to be a vital aspect of academic integration and achievement. Both education scholars (Chen, Hirumi, & Zhang, 2007; Ross & Hurlbert, 2004; Williamson & Gregory, 2010) and academic librarians (S. Clark & Chinburg, 2010; Dykeman & King, 1983; Getty, Burd, Burns, & Piele, 2000; Hurst & Leonard, 2007; York & Vance, 2009) examine the ways that information literacy

enhances academic achievement for college students in a wide variety of disciplines and course delivery formats. However, an institution of higher education must consider other critical issues beyond fostering student academic achievement and success. Although information literacy instruction most directly affects the university's academic goals, the library in general and information literacy specifically, influences institutional leadership and responses to public policy demands, as well as organizational culture within higher education.

Institutional Leadership. In his seminal text on leadership, Burns (1978) argued that leaders in politics, business, and education have a duty to transform their followers by empowering and uplifting them as individuals. Specifically, Burns asserted that the purpose of leadership is to “engage followers...and in the process to make better citizens of both leaders and followers” (p. 461). The Higher Learning Commission (HLC) stated that institutions of higher education must seek to transform both students and the broader community by emphasizing student learning, institutional improvement, and research and economic development efforts that benefit the wider community (Higher Learning Commission, 2013b).

As learning organizations (Senge, 1990) that support the research activities of students, faculty, and the broader community, academic libraries assist institutions in their mission of transformational leadership. More specifically, students with strong information literacy skills are better equipped to gather and critically evaluate the information they will encounter in their daily lives (Kuhlthau, 2004). If, as Burns (1978) asserted, leaders have an obligation to transform followers into capable leaders in their

own rights, then information literacy instruction should be seen as a key aspect of any university's instruction practices.

Public Policy. For better and worse, both the United States Department of Education and state governments continue to explore ways to hold colleges and universities accountable for the academic success of their students. In an era in which higher education is commonly defined as a private asset rather than a public good (Newfield, 2008), the general public no longer assumes automatically that universities are as worthy of public support as they were in earlier eras (Geiger, 2005). Scholar-practitioners of higher education leadership such as Kallison and Cohen (2010) argue that universities must bow to these policy pressures by accepting reform and accountability in exchange for continued governmental funding and overall intellectual and administrative autonomy.

Whether or not one agrees with these trends in higher education practice and public policy, both public and private institutions must maintain accreditation in order to accept student financial aid and other state and federal funds. Like most accrediting agencies, the HLC's criteria for accreditation include standards for the quality and continuous improvement of teaching and learning (Higher Learning Commission, 2013a). Specifically, institutions are required to educate students "in the effective use of research and information resources" (2013a, Criterion 3.d.5).

The Organizational Environment. University administrators and faculty have long considered the library to be a central component of university organization and culture. Tierney (2008) noted that the institutional culture and values of organizations in general, and universities specifically, influence the ways that individuals conceive of and

construct knowledge (p. 62). If Grimes (1993) and Lynch, et al. (2007) were correct that administrators continue to recognize the central role of the academic library (and by extension information literacy), then scholars of organizational theory such as Tierney (2008) would likely contend that librarians will continue to shape student learning activities as they have for the past two centuries. However, the status of the academic library within the institution may not be as secure as it seems at first glance.

Although Lynch, et al. (2007) reported that presidents and provosts continue to regard the library as the intellectual heart of the institution, the administrators who participated in the study also acknowledged that continuing changes in information access and use could diminish the role of the library in the future. Administrators expect library leaders to proactively add and improve resources and services that address student needs while working within budget constraints. The authors asserted that academic librarianship's continuing relevance would depend on the field's ability to adapt to evolving institutional needs, as well as the needs of the communities universities serve.

Academic Librarianship Responds to a Changing Higher Education Landscape

In the wake of these paradigm shifts, higher education administrators expect library leaders to proactively address organizational needs, as well as the needs of the communities that universities serve (Oakleaf, 2010). O'Connor (2006; 2009a; 2009b; 2009c) noted that library leaders increasingly turned to information literacy instruction as justification for the academic library's central role in strengthening student learning and success. However, she asserted that the positivist theoretical foundations of information literacy result in a transactional model of information "deposits" (Freire, 1970) that "is neither personally empowering nor conducive to the aims of democracy" (O'Connor,

2006, p. 196). For that reason, according to O'Connor, information literacy has yet to develop the "fully-formed theoretical foundation" (2006, p. 2) necessary for practitioners to provide their organizations with relevant education in the context of an evolving organizational and educational culture. Although scholars such as Kuhlthau (1991; 1993; 2004) and Elmborg (2006; 2010; 2012) have incorporated ideas from constructivism and critical pedagogy into the discourse of information literacy, the theoretical and pedagogical transformation of information literacy remains a work in progress.

On a more routine level, academic librarians also serve as formal mediators to students and other information seekers in the course of their information searches. Whether working with a roomful of students during an information literacy instruction session, or one-on-one at the reference desk with a student who has experienced obstacles in the search process, a librarian's job is to guide students to the information they are seeking. Ideally, the mediation process will not merely provide the student with the information being sought after, but also provide counseling and education in the skills a student needs to become a more effective searcher in his or her own right (Kuhlthau, 2004, p. 115-16). Following in Kuhlthau's footsteps, authors such as Limberg and Sundin (2006), McKenna (2009), Shah and Kitzie (2012) and Fourie (2013) have explored particular models and strategies for improving both the process and the promotion of formal search mediation services.

However, Kuhlthau (2004) notes that students are more likely to consult friends, family, or fellow students than they are to call upon the services of a formal mediator. Understandably, Kuhlthau argues that this phenomenon is due to weaknesses in mediation practices, a lack of marketing on the part of librarians, or both. However, as is

discussed in further detail in chapter 2, none of the above research of formal mediation practices explicitly provides evidence that librarians are better guides for all information seekers and all information search needs than are informal mediators. In addition, when Kuhlthau's work on mediation is considered in the light of work in the field of critical information literacy, it seems possible that her dichotomy of formal and informal mediators may not be a very useful tool for understanding what exactly happens in a search mediation encounter.

For instance, Tsai's (2012) exploratory survey of undergraduates' use of their social networks in information search mediation suggests the reverse of Kuhlthau's model—that students actually find informal mediation encounters more helpful and informative than consulting a librarian. When Tsai's findings are considered in the light of O'Connor's (2006, 2009a; b; c) critiques of the theoretical foundations of information literacy, the value of formal search mediation in student academic success may not be as strong as academic librarians or higher education administrators have assumed. In an era where tightened funding and changing institutional priorities are leading administrators and stakeholders to critique long-established practices within higher education, scholars and practitioners of information literacy and search mediation would be well advised to turn a critical lens on their own assumptions and practices. This dissertation serves as a modest first step in this necessary discussion.

Section Summary

Far from a matter that only concerns academic librarians, information literacy influences and is influenced by issues related to educational leadership, public policy, and the organizational environment of a university and higher education as a whole. Library

directors seeking to educate university officials about the value of information literacy to the institution must, as Oakleaf (2010) urges, understand and assess the ways that information literacy influences and is influenced by all of the considerations above. More specifically, librarians contend that the information literacy instruction and formal search mediation services they provide are the best method of instructing students in the information-seeking skills they need to succeed. However, recent critiques of information literacy's theoretical foundations and new information about students' search mediation preferences suggest that the value of information literacy, and the librarian-perceived dichotomy of informal versus formal search mediation, may not be as self-evident as it appears at first glance.

Problem Statement

Scholars of information literacy such as Kuhlthau (1991; 1993; 2004), Limberg & Sundin (2006), McKenna (2009), and Shah & Kitzie (2012) contend that information seekers' interactions with search mediators, particularly formal mediators such as librarians, play an important role in assisting seekers to overcome the common experience of uncertainty and to successfully navigate the information search process. However, those same scholars observe that even when aware of the availability and merits of asking librarians for help, students seem to consistently select and engage with mediators in ways that appear to experts to be relatively ineffective for learning how to navigate the information search process. This "perplexing and enigmatic state" of affairs (Clark, D. L, Guba, & Smith, 1977, p. 7) suggests that current literature on the information search process and information search mediation may not fully or accurately depict the aspects of search mediation that are actually the most important to students

who are performing an information search. An in-depth study of students' experiences of search mediation encounters and their perceptions of the role of mediation encounters within the information search process as a whole could shed light on this problem. A resolution to this perceived problem could provide guidance for librarians seeking to better serve students, and for theorists and researchers attempting to understand how search mediation encounters help students navigate the thoughts, feelings, and actions of the information search process.

Purpose Statement

The purpose of this study was to explore lower-division undergraduate students' thoughts, feelings, and actions as they engaged in and reflected on their information search mediation encounters over the course of a course-related information search process.

Research Questions

Based on the research problem and purpose, this study explored two main research questions.

1. What are the characteristics of information search mediation encounters as experienced by lower-division undergraduate students?
2. How do students use search mediation encounters to navigate the information search process?

Overview of Research Methodology

This dissertation is a qualitative multiple case study (Stake, 2006) of the lived information search experiences of Composition II students, a class in which information-seeking tasks are often part of course requirements. Creswell (2007) states that a

qualitative research design is called for when research questions can only be answered via an in-depth exploration of a human issue or concern too complex, sensitive, or poorly understood to be examined with a simple survey or experiment. More specifically, Stake (2006) contends that a researcher should consider a multiple case study design when the questions are concerned with comparing and contrasting multiple experiences with or examples of a particular “program, phenomenon, or condition”, which Stake calls a “quintain” (p. 6). Various entities or individuals who experience or enact the quintain are considered cases within the boundaries of the multiple case study. A case study researcher will gather a wide variety of qualitative data on each case in order to understand it as fully as possible. Once the researcher believes they have a good understanding of each case in isolation, the researcher will then consider the cases in relationship with each other. This cross-case analysis of multiple manifestations of the quintain serves to develop insights grounded in multiple cases that will lead to a greater understanding of the quintain.

As described in the research problem, purpose, and questions, this study is chiefly concerned with understanding undergraduate students’ information search mediation encounters; both the students’ experiences of these encounters, and the ways in which these various encounters may change a student’s experience of an information search as a whole. For that reason, I explored the quintain of this study, search mediation encounters, through the lens of several different cases. Each case is one student’s experience of a single information search as defined by Kuhlthau (2004), spanning from the initial selection of a topic to the submission of the completed assignment to the student’s instructor. The case study was conducted with current and recent Composition II students

at a community college system in the Southern United States. This overview of the methodology will provide an introduction to the underlying epistemology and data collection and analysis methods of the study. More detail on the theoretical framework, methodology, and methods can be found in chapter 3.

Epistemology and Theoretical Perspective

Following tenets of pragmatic constructionism influenced by both Dewey (1933) and Bourdieu (1977), I contend that people come to understand concepts most effectively through experience and social interactions. I also assert that the experience of engaging with the outside world can sometimes effect change in the object being interacted with as well as the subject attempting to make sense of the outside world through such engagement with people and ideas. In addition, different and equally valid interpretations of reality may emerge depending on the perspective of and theoretical lenses employed by viewers. For this reason, knowledge is often constructed and codified through social processes and group consensus, based on how well it describes or influences events in the outside world. As J. A. Anderson (1996) describes in his discussion of pragmatic constructionism, “Belief advances to knowledge according to its public success” (p. 40).

Symbolic Interactionism is the theoretical perspective that informs the study. As Crotty (1998) notes, a theoretical perspective provides a context and key assumptions about how the world works. The perspective, in turn, implicitly provides a rationale for the methodology of a study. Interpretivism, or a perspective that “looks for culturally derived and historically situated interpretations of the social life-world” (p. 66), has always seemed the obvious choice for exploring students’ lived experiences of particular information search mediation encounters as well as their experiences of the information

search process as a whole. However, interpretivism is almost too broad a perspective to be helpful in making methodological choices.

As discussed above, the purpose of this study is to explore students' experiences of search mediation, and to examine the role those mediation encounters play in the information search process as a whole. Symbolic interactionism, a philosophical offshoot of the interpretivist school, is specifically concerned with an actor's view of a situation, above all else. By gathering thick, rich descriptions of students' experiences of information search encounters, and discussing students' impressions of the importance of these encounters within the context of an information search, I engaged in dialogues with students that allowed me to "become aware of the perceptions, feelings, and attitudes of others and interpret their meanings and intent" (Crotty 1998, p. 75-6).

Theoretical Framework

Research studies often employ theoretical frameworks as part of their design, in order to provide a starting point to determine whether new research can provide confirmation or complication to an existing model of the issue under examination. As *a priori* frameworks, these theories influence design and guide research questions, and they are pre-selected (prior to data collection) for use in data analysis. The research problem, purpose, and questions are grounded in a review of the literature of information seeking, search uncertainty, and mediation. Kuhlthau's (1991; 2004) Information Search Process model, in particular, was used to frame the boundaries and stages of the information searches to be studied. Stake (1995) argues persuasively for eschewing an *a priori* theoretical framework in a case study design when research questions are directed toward exploring and understanding a broader social sciences issue (p. 16-17). Instead of framing

the study within the parameters of an existing model, the ways that the issue influences and is influenced by the case should serve as the starting point for design and analysis.

However, the exploratory, participant-driven nature of the study allowed the data I collected to lead me to a final decision about an appropriate theoretical lens for exploring my findings about students' search mediation experiences, rather than the other way around. Upon reflecting on the findings of my study, I determined that the ACRL Framework of Information Literacy (2015) could serve as a useful framework for analyzing and discussing potential implications of the findings of my study. On a note of clarification, I will capitalize the word Framework when discussing the ACRL Framework for Information literacy, but present it in lower case when I am discussing theoretical frameworks in general.

Data Collection and Analysis Procedures

The study took place at Urban Community College (UCC), a community college system in the southern United States that consists of four main campuses, numerous outreach centers, and high school concurrent enrollment programs in school districts within the Urban Metropolitan area and its surrounding suburbs. UCC is actually the only public institution in this city where students can complete lower division coursework, and draws an extremely diverse population of recent high school graduates from the local school districts taking advantage of a tuition assistance program as well as nontraditional students returning to school. UCC markets itself as a first step to a college education, and this was reflected in the fact that seven of the eight students in this study mentioned that their goal was to transfer on to another institution to complete a bachelor's degree or even graduate work.

Upon successful Institutional Review Board approval and gaining entry to observe 2-3 sections of Composition II during the writing process of a major research assignment, I began the data gathering process. I gathered numerous forms of data for the study, including participant interviews and drawings, classroom observations, library and computer lab observations, statements from informants aside from interview participants, and documents and artifacts. Throughout my time shadowing classes, I observed the students in several different work environments. I used ethnographic methods to take detailed field notes, and gathered statements from informants such as students and mediators involved in encounters that I observed in class, at the library, and in informal study situations. As soon as possible after completion of the assignment, eight students participated in 30-45 minute open-ended, semi-structured qualitative interviews regarding their search mediation experiences and the information search process as a whole. After completing the interview protocol. I then asked each student to take 10-15 minutes to draw an image or images depicting their mediation and information-seeking experiences (Kearney & Hyle 2004). Upon the completion of this exercise, I asked the student to explain these drawings, and asked clarifying questions which emerged from their drawings and descriptions. In addition to observations and interviews, I gathered course syllabi, assignment descriptions, and copies of student notes, drafts, and completed assignments. I assured anonymity of participants by assigning each interview participant a pseudonym as well as acquiring informed consent from all interview participants. I gathered no names during observation sessions.

Stake's (2006) discussion of multiple case study methods served as a roadmap for my data analysis. Stake suggests approaching a multiple case study in two separate

phases; the creation of individual case reports that examine each case in isolation, followed by a cross-case analysis. These two steps are performed in chapters 4 and 5 of my dissertation. Chapter 6, the final chapter of my dissertation, consists in part of a third step, an examination of the cross-case assertions through the lens of the ACRL Framework for Information Literacy (Association of College and Research Libraries, 2015). Following the examination of this study's findings through the lens of this theoretical framework, I close this dissertation with an exploration and discussion of the potential implications of my findings for theory, research, and practice. Further details about data collection and analysis are available in chapter 3.

In order to ensure that the findings are credible, transferable, dependable, and confirmable (Lincoln & Guba, 1986), the study included negative case analysis, triangulation between multiple data sources, member checking of transcripts, peer debriefing, thick description, and a reflexivity journal in order to bolster the trustworthiness of the findings. I will discuss the details of these and other techniques that will be used to validate the trustworthiness of the study in chapter 3.

Definitions of Key Terms

The following technical terms related to Library and Information Studies, information literacy, and information seeking will be used throughout this dissertation.

- Information: Anything an individual notices about oneself or reality (Case, 2012, p. 5).
- Information Literacy: The abilities involved in identifying a need for information, seeking information efficiently, evaluating its appropriateness, and using it effectively and ethically (Association of College and Research Libraries, 2000).

Note that this term will be presented in the text in lower case, unless part of a larger title such as Critical Information Literacy or the ACRL Framework for Information Literacy.

- **Information Seeking:** Generally considered a subset of skills within the larger curriculum of information literacy, information seeking is any activity undertaken to gather needed information (Case, 2012, p. 6).
- **Uncertainty:** a commonly experienced cognitive state that often inspires potentially troublesome emotions of confusion and frustration for information seekers negotiating the information search process (Kuhlthau, 1993).
- **Information Search Mediation:** A process where an information seeker consults another person who they believe has the ability to guide them through the vague thoughts and emotions of information search uncertainty (Kuhlthau, 2004).
- **Formal Mediators:** librarians and instructors of the course for which the information search is being conducted. (Kuhlthau, 2004)
- **Informal Mediators:** family, friends, colleagues, and subject matter experts aside from instructors or professors. (Kuhlthau, 2004)

Significance of the Study

The significance of this study can be discussed within the three major areas of research, theory, and practice.

Significance to Research

All searches for information, by definition, are fueled by an information seeker's lack of knowledge on a topic, a deficit often called information uncertainty. Kuhlthau (1993) defined uncertainty as a commonly experienced cognitive state that often inspires

potentially troublesome emotions of confusion and frustration for information seekers negotiating the information search process. According to Kuhlthau (1993), the experience of grappling with and overcoming uncertainty is central to successful navigation of information seeking.

On the surface, it seems reasonably logical to argue, as Kuhlthau (2004) does, that formal mediation can help students who may be “calling out for help in the midst of the uncertainty and confusion of the earlier stages” (p. 89) of the information search process. However, as will be discussed in chapter 2, there is a relative dearth of empirical evidence for this claim. In addition, the clear binary dichotomy between formal and informal mediators that Kuhlthau suggests may be too simplistic to capture the complex reality of the lived experience of an encounter between a student and a person whom he or she has approached for help in finding information. This qualitative study, based on examining the details of students’ experiences of interactions, rather than codifying the hierarchy of mediator or encounter “types”, serves as a foundation of a new line of inquiry into the social aspects of the information search process.

Significance to Theory

As discussed earlier in this chapter, this study explored students’ search mediation experiences through a theoretical framework that attempts to describe the process by which students become more critically conscious seekers of information. Although Critical Information Literacy is emerging as an important framework within the literature of information seeking and information literacy, it is still at best an emerging body of literature, not a model of information literacy per se. The same can be said to a lesser degree of the ACRL Framework for Information Literacy (2015), which draws on

Critical Information Literacy as well as other areas of information literacy. While providing some theoretical detail and definitions of aspects of information literacy as a whole, the Framework is more prescriptive than descriptive. This study could serve as a depiction of the ways that students gain critical consciousness of information searching through the process of collaborating with mediators, and could also provide an early comparison between the ACRL Framework's threshold concepts and students' lived information-seeking experiences.

Significance to Practice

As discussed above, librarians and library directors argue that information literacy and the formal search mediation services provided by librarians give students the skills needed to locate and evaluate information in a complex world (Chen, Hirumi, & Zhang, 2007; Ross & Hurlbert, 2004; Williamson & Gregory, 2010; Kuhlthau, 2004; Limberg and Sundin, 2006; McKenna, 2009; Shah and Kitzie, 2012). However, the dearth of conclusive evidence proving the superiority of formal mediation as well as students' tendencies to prefer consultation with informal mediators undermines this assertion (Tsai, 2012). Lynch, et al's (2007) exploration of administrators' attitudes toward the role of the academic library in higher education indicates that many provosts and presidents are starting to question the long-term centrality of the academic library. Even library scholars such as Elmborg (2006, 2010, 2012) and O'Connor (2006; 2009a; 2009b; 2009c) have critiqued the strength of librarians' arguments for their relevance. Gaining a clearer understanding of what students experience during information search mediation encounters could enable librarians to more fully understand how their practices enable

students to become more capable and critical information seekers, and to make changes to practice where necessary.

Section Summary

By gaining a clearer understanding of students' lived experiences of search mediation, researchers may find this study useful as a starting point for future exploration of other social aspects of information seeking. Theoreticians may be able to use them to strengthen a weak spot in current models, and practitioners may be able to design more effective pedagogy and curricula. Like all other activities in life, information seeking takes place within a broader social context. A fuller understanding of students' motivations and choices when seeking out search mediation can only serve to strengthen information literacy theory, research, and practice.

Boundaries of the Study

The study took place within the following boundaries. First, the research was conducted within the methodological confines of a qualitative multiple case study, as defined in more detail in chapter 3. The study was conducted at a single institution, an urban four-campus community college system. The study explored a single issue, information search mediation, as part of and as influence upon a student's information search process for a course assignment. Each student's information search process, as defined by the model developed by Kuhlthau (1991, 1993, 2004) is considered a case for the purposes of the study. The study is also bound by time, as data was gathered during the spring 2015 semester. Finally, this study only examines the experiences of students' course-related mediation encounters related to their assignments in Composition II.

Conclusion and Organization of the Study

The theory and practice of information seeking, as a foundational aspect of information literacy, is relevant to student academic success, as well as to leadership, public policy, and the organizational environment of higher education. Although librarians contend that students are best served by consulting formal mediators (i.e. themselves) for help during an information search, students are much more likely to prefer consulting what are defined in the literature as informal mediators (Tsai, 2012). The purpose of this multiple case study was to gain a clearer understanding of information seekers' lived experiences of search mediation encounters as well as the ways those experiences might influence a student's information search process as a whole. Such an understanding could help practitioners to design better information literacy pedagogies and search mediation protocols which could in turn strengthen the academic library's ability to serve as a tool to foster student academic achievement. These findings could also provide researchers with a starting point for exploration of the social aspects of the information search process. Finally, by examining students' lived experiences of search mediation encounters, theorists attempting to build models of information seeking will be able to draw on these findings to discover how information search mediation encounters influence the ways in which students become skilled and critical information seekers. Chapter 2 will consist of a review of literature relevant to the study. The review will focus on models of the information search process, information seekers' experiences of uncertainty, the role of formal and informal mediators in alleviating uncertainty, and the emerging framework of Critical Information Literacy, including three prospective theoretical lenses that attempt to incorporate aspects

of critical information literacy into research, theory, and practice. Chapter 3 will describe the multiple case study methodology and the research problem, purpose, and questions, as well as methods for gathering data, generating findings through data analysis, and ensuring the credibility, transferability, dependability, and confirmability of the study. Chapters 4 and 5 will present the case reports and cross-case assertions respectively, and will be followed by a discussion and an exploration of those findings in Chapter 6.

CHAPTER II

REVIEW OF LITERATURE

The literature review will explore current scholarship in the field of information seeking. This review will open with a discussion and critique of the key theoretical models within the realm of information seeking, with a particular focus on Carol Kuhlthau's Information Search Process (ISP) model (Kuhlthau, 1988a; b; c; 1989; 1991; 2004; Kuhlthau, Heinstrom, & Todd, 2008). The second part of this review will explore the theoretical and empirical literature of information search uncertainty. Scholars of information seeking such as Kuhlthau and Nicholas Belkin (1978, 2005) consider an information seeker's sense of uncertainty to be the driving force that both inspires a person to seek information and drives that person through the process.

Many information seekers consult multiple resources to resolve their search uncertainty, particularly intermediaries such as librarians, subject matter experts, and friends. The third section of this chapter will explore the literature of information search mediation, with emphasis on the dichotomy between formal and informal mediation encounters. Interestingly, the emerging field of critical information literacy, a subfield of Freire's (1970) critical pedagogy, may complicate long-held assumptions surrounding the relative values of formal and informal search mediation for undergraduates' information searching. The fourth section will discuss the literature of critical information literacy

and its possible implications for the study, with particular focus on Olson-Kopp and Kopp's (2010) description of critically conscious information seeking and Elmborg's (2010) model of multiple information literacies. The fifth and final section of the review will consist of a brief overview of the new (2015) ACRL Framework for Information Literacy, which I use as a theoretical lens to examine the findings of this study. The review concludes with a summary and discussion of this study's potential for resolving the contradiction between search mediation literature and the arguments of critical information literacy scholars.

Understanding Information Seeking

This section of the review consists of an exploration of key information-seeking models, as well as an overview of literature exploring undergraduates' information-seeking experiences. It will utilize Case's (2012) definitions of information and information seeking. Case defines information broadly, as anything an observer notices, whether about him or herself, or within the environment. He also notes that at times, an individual will perceive that they have an information need, meaning that they lack needed information to achieve a goal. An individual will typically attempt to satisfy an information need through information seeking.

Key Models of Information Seeking

According to S.R. Ranganathan's seminal (1931, reprinted 2006) work defining the mission and goals of 20th century librarianship, the mission of libraries, and by extension librarians, is to connect users with the information they need as efficiently as possible. This mission is encapsulated in the five laws of librarianship, which continue to

serve as a widely-cited statement of principles for the profession (Crawford & Gorman, 1995; Stegmann & Kretschmer, 2013):

1. Books are for use.
2. Every reader his or her book.
3. Every book its reader.
4. Save the time of the reader.
5. The library is a growing organism (Ranganathan et al., 2006; pp. 1, 75, 299, 337, & 382).

Since 1931, scholars of the five laws have modified them somewhat, typically replacing the term “book” with “information” (Barner, 2011). That said, Raganathan’s laws remain a key topic in introductory classes at most library schools, and the broader message of the five laws is still heeded by librarianship as a profession. The laws are tacitly or explicitly considered in matters related to collection development, library instruction, and even marketing (Barner, 2011; Bhatt, 2011; Stegmann & Kretschmer, 2013).

In Ranganathan’s era, the chief stumbling block that stood between a user and his or her information was typically a lack of access to information. Almost all published information was found in the form of print books and periodicals, which were scarce and often expensive, particularly if a reader needed complex technical or scholarly information for educational purposes. Given the scarcity and value of information, library materials were often stored in closed stacks, and only a chosen few scholars had the privilege of using them. However, as times have changed, the struggles facing information seekers have evolved as well (O’Connor, 2006; Oakleaf, 2010). As anyone who has ever used a web search engine or a database of scholarly literature is aware, scarcity of information is typically no longer an issue in most information searches.

In order to teach information literacy effectively, librarians and scholars of information studies have attempted to construct process models of information seeking. While most models restrict themselves to describing the information behaviors of a particular type of seeker such as lawyers, healthcare professionals, or patients (e.g. Baldwin & Rice, 1997; Longo, 2005; Kahlor, 2010), four models attempt to describe the information-seeking activities of most (if not all) information seekers, while simultaneously detailing their actions and experiences.

Classifying Seekers' Actions: The Ellis Model

In his doctoral dissertation, David Ellis (1987) uses the principles of grounded theory to create a model of the behaviors that students, practitioners and researchers in social sciences, physical sciences, and education perform while seeking information. He refined his model in two later (1989, 1993) articles. Unlike most earlier models, such as the one devised by Robertson (1977) which conceived of information seeking as a single straight line, Ellis envisioned an information seeker, who, upon starting a search, would choose among several types of actions depending on his or her interests and the conventions of the field of study.

Ellis (1989) identified several different types of information-seeking actions common to academic information seekers, though the emphases on each varied by discipline and level of scholarly expertise. *Chaining* is a process where an information seeker might follow citations, hyperlinks, or other references in one source to find other pertinent information. Seekers also typically spent time *browsing* in areas of general interest and *monitoring* those sources for new information. After *differentiating* between sources to find the ones of greatest use, the researcher would then *extract* the information

required to fulfill a given need. Different disciplines described these phases in slightly different terms or emphasized them differently, but the same general actions were observed in interviews and search diaries of researchers in a variety of disciplines.

Thinking About Information: The Bates (1989) and Wilson (1981, 1999) Models

For Ellis (1989), information seekers emphasized a particular action or set of actions depending on the field in which they were researching. Marcia Bates (1989), whose work was grounded in aspects of Ellis's model published earlier the same year, takes Ellis' work a step further. Bates contends that information seekers' choices of next actions, as well as the goals of the search itself, could and did change depending on the information a researcher found over the course of the search.

In a shift from Ellis's (1987, 1989, 1993) stationary seeker selecting information search behaviors from a buffet of possible actions, Bates (1989) describes information seeking as a meandering stroll through an information landscape. A seeker might take a particular search action, which would reveal a piece of information relevant to the goal of the search. However, the seeker then typically thinks about the information and its new implications for the seeker's original topic or question. This cognitive process in turn can lead to changes in both the information being sought and the tactics of the search itself. The interplay between seeking information and thinking about the information found can be described as a meandering process of "berrypicking" (p. 407), in which the seeker and the information he or she seeks change each other in unexpected ways.

Wilson's (1981, 1999) models of information-seeking behavior also overtly incorporate the role of cognition during information seeking. In Wilson's first (1981) model, he conceives of information seeking as a feedback loop, in which a users'

satisfaction (or lack thereof) with the information uncovered informs future search activities. Uniquely, Wilson considered the role of other people in his model. Although most models simply focus on the role of information sources in the search process, Wilson particularly notes the role of information exchange between people as a crucial aspect of thinking about the information discovered and constructing knowledge out of that information (1981, p. 5).

Wilson's attempts to create a model that captured all aspects of the information-seeking experience continued for nearly two decades. In a refinement of his model, Wilson (1999) contends that a searcher's actions and thoughts during the search process are determined in part by the searcher's context and prior experiences. In addition, a searcher is influenced by personal, psychological, demographic, role, and environmental variables, as well as the characteristics of sources themselves. Although critics such as Niedźwiedzka (2003) contend that Wilson erred in conceiving of a searcher's context as something that should be fully separated from the searcher him or herself, Wilson is still one of the first theorists of information seeking to consider the social and contextual nature of information seekers' actions and thoughts. Kuhlthau would build further on Wilson's model by adding seekers' affective experiences during a search to her conception of information seeking.

Kuhlthau's Model of the Information Search Process (ISP)

Carol Kuhlthau (1991, 1993, 2004; Kuhlthau, Heinström & Todd, 2008) considered the interplay between actions and cognition described by Bates (1989) and Wilson (1981, 1999), and added a third layer of complexity. In so doing, Kuhlthau created a model that has become the standard for nearly all information-seeking research

over the past 20 years. Kuhlthau conceptualized information seeking as an ongoing, constructivist process (2004, p. 6). Based on two decades of qualitative and quantitative research, Kuhlthau (2004) built and refined a widely used model to conceptualize searchers' experiences of information seeking.

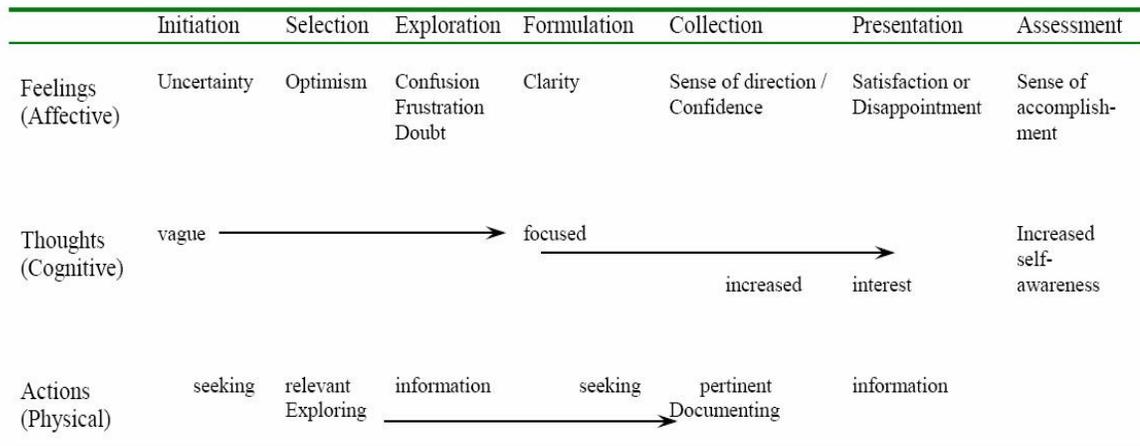


Figure 1. Model of the Information Search Process (Kuhlthau, 2004, used with permission of the author)

A model of the information search process. Kuhlthau (2004) explored students' experiences of information seeking in the light of seminal pragmatic constructivist educational and psychological theorists Dewey (1933), Kelly (1963), and Bruner (1973). In her model, the Information Search Process (ISP) is a six-stage journey of search initiation, topic selection, exploration of the topic, formulation of understanding from the information gathered, collection of additional pertinent information, and presentation of the acquired information. Finally, the information seeker reflects on and assesses his or her experiences, and uses the lessons learned in later information-seeking projects. In each stage of the process, information seekers typically feel different emotions, grow in their cognitive understanding of a topic, and undertake different search activities and strategies. In Kuhlthau's model of a successful search (figure 1), students

move from emotions of anxiety to feelings of accomplishment, from actions of topic exploration to documenting pertinent information, and from a vague to a clear cognitive understanding of their topic.

Verifying the ISP model. As discussed above, Kuhlthau developed her preliminary (1988a) version of the ISP in a qualitative study of a small group of high school students. Kuhlthau then embarked on a two-track research process that allowed her to simultaneously refine her model and verify whether it might be generalizable to other contexts. In one thread of research, Kuhlthau (1989) expanded her focus by administering a set of surveys to a larger group of high school students at different achievement levels, and expanded it further by surveying public, school, and academic library users at numerous sites (Kuhlthau, Turock, George, & Belvin, 1990). With no statistically significant differences discovered, the model generally held true for all groups surveyed.

In addition, Kuhlthau wanted to determine if individuals' information-seeking processes changed over time. In two studies, Kuhlthau revisited her original group of high school students five years later. After examining their current search processes via the same quantitative surveys used in the large-scale studies (Kuhlthau, 1988b) as well as through one-hour qualitative interviews (Kuhlthau, 1988c), she determined that the model remained applicable over time. With minor refinements, the model was published in the form depicted above (Kuhlthau, 1991), and discussed in further detail in Kuhlthau's seminal (2004) *Seeking Meaning*, which has become a standard text in librarianship exploring issues related to the ISP.

As described above, much of Kuhlthau's work was done in an academic context. However, researchers have found the model applicable to children (Druin, Foss, Hutchinson, Golub, & Hatley, 2010), pregnant women seeking information for health care decisions (Lagan, Sinclair, & Kernohan, 2010), tourists (Ho, Lin, & Chen, 2012), and even city managers (Saastamoinen, Kumpulainen, Vakkari, & Jarvelin, 2013). However, most of the empirical research performed with Kuhlthau's model has been done in the realm of information-seeking activities in secondary and higher education. For the purposes of this review, I present a deeper analysis of recent works that have applied Kuhlthau's work to the realm of undergraduate information seeking.

Applications of the ISP Model in the Undergraduate Context

In addition to other skills, an information literate student must be able to define an information need, efficiently search for information that addresses that need, and critically evaluate that information for potential inclusion in his or her knowledge base (Association of College and Research Libraries, 2000). Given the increasing emphasis on information literacy instruction in the mission and activities of academic libraries (O'Connor, 2009a; b; c), academic librarians, especially those involved in teaching undergraduates, have developed a growing corpus of research on undergraduate information behavior as viewed through the lens of the ISP.

Much like the three-pronged nature of Kuhlthau's model, empirical studies of information seeking from the last decade seem to fall into three general categories. First, researchers such as Whitmire (2003), Holliday and Li (2004) and Daniel (2013) explore students' thoughts regarding information searching, particularly the influences of personal epistemology (Hofer & Pintrich, 2004), metacognition, and the ways that

students think about the information that they find. In the second (and largest) strand of literature, researchers examine students' skills with the actions of information seeking, particularly in the stages of exploration, formulation, and collection. Finally, librarians have recently become more interested in students' emotions during the ISP, particularly anxiety, frustration, and the happiness and relief that often results as an information search becomes more focused and productive.

Whitmire (2003) is among the first to examine the influence of personal epistemology on information search, by drawing on models of epistemological development as well as Kuhlthau's (1991; 2004) ISP. Upon interviewing 20 Ivy League undergraduates engaged in their senior projects, Whitmire found that students' personal epistemologies influenced their information search processes in several ways. First, students with lower epistemological beliefs took a less active role in selecting their project topics, often deferring to the suggestions of their advisors. High-level epistemological believers, in addition to determining and refining their own topics, were also more likely to consult search mediators such as librarians, experts, and peers. Students with well-developed epistemologies also tended to attempt a wider variety of search strategies. Finally, students with more highly-developed epistemologies reported that they had the ability to evaluate and critically engage with the sources they found.

In a similar vein, Holliday and Li (2004) and Daniel (2013) explore the cognitive information search experiences of millennial-aged college students. Although the studies were conducted a decade apart from each other, the authors tell similar stories. The authors of both articles note students' increased tendency to turn to the web and stop seeking information once they have "enough", whether or not they have a full

understanding of the topic. They advise librarians consider new tactics in instruction, particularly an increased focus on teaching students how to move beyond a surface understanding of their topics to a deeper critical engagement with the subject matter.

Mestre (2006) affirms Holliday and Li's (2004) arguments by urging instructors and instruction librarians to recognize and accommodate different learning styles in order to remain relevant in a digital information age. However, Becker (2009) argues that the rise of the digital native college student is greatly exaggerated. Based on his studies of community college students, students do not turn to the first hits they find on Google simply out of convenience. Instead, he concludes that students lack not only the skills and comfort level needed to engage with library sources and mediators, but also an understanding of critical source evaluation needed to effectively evaluate and synthesize sources from the web. Based on this exploration of students' cognitive approaches to information seeking, it seems possible that different explanations may hold true for different students. These differences seem to be related to both the level of personal epistemology students have developed, and their facility with the tools and actions of searching itself.

In a finding that comes as little surprise to instruction librarians who work with first year classes and students, most students come to college with limited knowledge of the skills and actions required to successfully complete an information search (Mittermeyer, 2005). Given that most instruction librarians must provide a foundation in the basics of searching in a one-hour instruction session, a large body of literature has emerged exploring the best pedagogical and theoretical tactics for bringing students up to speed rapidly. Such tactics include the use of constructivist teaching methods (Sizemore

& Marcum, 2008), embedded instruction tutorials and services in online courses (S. Clark & Chinburg, 2010; York & Vance, 2009), and even teaching Kuhlthau's Information Search Process itself to students (Mortimore, 2010; Kracker 2002; Kracker & Wang 2002). Each of the studies mentioned above addresses different aspects of information literacy pedagogy and curriculum. However, when the literature of teaching search skills is taken as a whole, it becomes clear that librarians must carefully determine a limited number of the most important skills to teach new information seekers, or risk leaving them more confused and emotionally overwhelmed than when they entered the library or began reviewing a tutorial or research guide.

As discussed above, Kuhlthau's most important contribution to the understanding of the information-seeking process may well have been the inclusion of students' emotional experiences in her Information Search Process model (1991; 2004). Several researchers have focused their efforts on gaining a clearer understanding of information seekers' emotions, particularly the anxiety, confusion, frustration and doubt that can stop a searcher in his or her tracks (S. Clark, 2014). In a series of two (Kracker, 2002; Kracker & Wang, 2002) articles, Kracker explores both the quantitative and qualitative effects of an informational lecture on the ISP (and its inherent uncertainty) on the anxiety level of undergraduate students. The quantitative surveys suggested that students who heard the lecture felt decreased anxiety about their searching abilities. However, these students were more likely than the control group to report feelings of anxiety and uncertainty in their post-assignment paragraphs. Kracker suggests that this reported increase in anxiety may reflect the group's awareness, gained through information provided in the lecture, of the potential for negative emotions rather than any inherent emotional response.

By performing a content analysis of student essays and administering instruments that measure anxiety and critical thinking abilities, Kwon (2008) determined that critical thinking (a cognitive aspect of information seeking) and search anxiety actually influence each other throughout the search process. Although all students reported a great deal of anxiety in the opening stages of the search process, students who reported high levels of critical thinking skills also demonstrated low levels of anxiety as information seeking progressed. In a similar vein to Kwon's identification of the interplay of cognitive and affective dimensions within the search process, Denison and Montgomery (2012) note a connection between the emotions of seekers and the actions they take during the search. The authors contend that students occasionally knowingly select less reliable information from a website over resources available in library databases, even though they state they have the skills needed to find library resources. These students state that they occasionally opt for information that is good enough, simply because they find Google a less emotionally frustrating experience than a library database.

In the diagram of Kuhlthau's information search process (fig. 1), students' thoughts, behaviors, and emotions are depicted as three parallel lines. However, the research on affective aspects of information searching strongly indicates that each of the three realms of information seeking influence the others. Kuhlthau herself notes this dynamic in her (2004) in-depth monograph exploring the ISP in fine detail. According to Kuhlthau (1993), the complexities of the interrelationships between thoughts, feelings, and actions of information seeking can best be understood by gaining a clearer understanding of a searcher's perspective on the process itself. In addition to the thoughts, actions, and emotions experienced during the search process, searchers reported

experiences of uncertainty about the topic and about the best strategies for engaging in the ISP itself. Uncertainty seems to be the force that both influences a seeker to begin looking for information, and accelerates or stymies a seeker's progress toward the successful completion of an information search.

Uncertainty as a Force in the Information Search Process

In addition to developing the Information Search Process, Carol Kuhlthau was one of the first major scholars of information literacy, along with Nicholas Belkin (1978, 2005), to describe uncertainty as a key force at play during information seeking.

Although Belkin conceives of uncertainty as a force that serves primarily to instigate an information search, Kuhlthau (1993; 2004) argues that uncertainty, while strongest in the earliest stages of the ISP, can potentially reemerge at any point until the completion of a search.

Kuhlthau's Principle of Uncertainty

In an early (1993) article, Kuhlthau defined uncertainty as a commonly experienced cognitive state that often inspires potentially troublesome emotions of confusion and frustration for information seekers negotiating the information search process. According to Kuhlthau, the experience of grappling with and overcoming uncertainty is central to successful navigation of information seeking. In her later (2004) monograph on information seeking, Kuhlthau discusses the uncertainty principle in greater detail, and contends that information seekers experience shifts in six factors, or "corollaries", including process, formulation, redundancy, mood, prediction, and momentum. Students' changing experiences of these corollaries may explain the growth or diminishment of a searcher's experience of uncertainty.

In the process corollary, information seekers combat uncertainty by becoming more comfortable with the process of constructing understanding and meaning from the disparate pieces of information gathered in a search. In the formulation corollary, this increased mastery of the process of making meaning allows students to define their topics (and by extension their information needs) with more precision. Seekers experience the redundancy corollary as they progress through the collection stage of the ISP. As seekers encounter the same material repeatedly, they gain confidence that they have found most or all of the available information on a topic, reducing uncertainty about whether their search is on the right track.

A seeker's mood is obviously an important aspect of successfully managing uncertainty (Nahl, 2007). Students must have enough comfort with the mood corollary of uncertainty to approach the literature in an open, invitational stance that enables them to search broadly, learn new things, and change their topic as circumstances dictate. As the search continues, a seeker transitions to a more direct or "indicative" mood, as their focus turns to filling in the blanks of understanding and completing the search for information. A student's mood is also helped via growing comfort with the prediction corollary. As the results of a given action in a search become more predictable, uncertainty lessens. Finally, a searcher's sheer interest in a topic can give them the momentum needed to continue searching in the face of uncertainty, just as a lack of interest can cause them to abandon a search and move on.

In the early stages of the search process, when understanding is vague at best and research skills may be at their weakest, searchers face the strongest and most self-defeating feelings and thoughts of uncertainty and its corollaries, a particularly low

moment Kuhlthau calls “The Dip” (2008, p. 68). This uncertainty is only resolved at the breakthrough between the exploration and formulation stages (Kuhlthau’s stages 3 and 4). In a successful search, the information seeker eventually discovers (and comprehends) enough information on their topic to begin creating a mental outline of its key issues and nuances.

When a searcher achieves this moment of insight, his or her topic crystallizes and takes form in the searcher’s brain. This comprehension does more than any library tutorial or reference interview to dissipate uncertainty, clarify understanding, and empower the searcher to continue seeking and synthesizing information with increased confidence and competence. Unfortunately, not all students understand that uncertainty is a common experience in information search, and not in itself a cause for alarm. Kuhlthau’s (1993) article closes with a call to librarians to add discussions of the search process to library instruction in the hopes of alleviating the confusion and anxiety commonly experienced early in the search process.

Uncertainty as Fuel and Hurdle

Later researchers of undergraduate information seeking explored and verified the role of uncertainty in the information-seeking process as described by Kuhlthau in 1993 and elaborated in later (2004, 2008) work. Genuis (2007) argues that the confusion of the early stages of the information-seeking process is an inevitable product of the process of constructing meaning through information seeking that cannot be eased with foreknowledge. Mäkitalo, Weinberger, Häkkinen, Järvelä, & Fischer (2005) as well as Brumfield (2008) contend that uncertainty is particularly troublesome in an online course

environment, and performed research that showed the utility of tools such as online tutorials in mitigating uncertainty.

Different students may also experience uncertainty in different ways, and with different results. For instance, Hyldegård (2006), based on her qualitative investigation of uncertainty within study groups, argues that uncertainty can arise from or be exacerbated by factors other than the search itself. The personal factors that each person brings to the search also influences uncertainty, as does the students' comfort level with teammates and the work group dynamic as a whole. In general, Hyldegård contends that the more comfortable a student feels in the context within which he or she conducts the search, the less uncertainty will be at play during the search process. Chowdhury and Gibb (2009) also observe that different populations seem to experience greater or lesser levels of uncertainty, and even experience different levels of discomfort over their uncertainty. Humanities students and women, for instance, seem to find uncertainty a larger stumbling block than do students in engineering and physical sciences.

In a similar vein, Given (2002) and Gold's (2005) explorations of information seeking among nontraditional students seems to strengthen Hyldegård's (2006) and Chowdhury and Gibb's (2009) observations. Given (2002) explores the everyday and academic information-seeking activities of nontraditional students, in an attempt to see how each sphere might inform the other. Although she did not specifically address issues like uncertainty and search anxiety that are prominent in Kuhlthau's (1993) model, her findings reinforce the need for information scholars to avoid the false dichotomy between information seeking at school and in other aspects of a student's life.

Building on Given (2002), Gold (2005) begins with Knowles' (1980) theory of Andragogy (pedagogy of adult learning), and constructs a model of information literacy pedagogy for nontraditional students that she implemented at her university. Gold contends that a one-size fits all model of information seeking may not accurately capture the unique emotions, thoughts, and actions that nontraditional students may undertake in the information process. In turn, if nontraditional students' traits and characteristics are not taken into consideration when teaching them how to successfully navigate the information-seeking process, their academic integration, learning outcomes, and persistence could be at risk.

The Upside of Uncertainty

Given's (2002) and Gold's (2005) studies both suggest that experiences of search uncertainty might complicate a sense of academic integration, and by extension a student's persistence in college. However, other scholars of uncertainty contend that uncertainty, if understood and accepted by an information seeker, can actually lead to a successful search, and may even be a necessary part of the experience of uncovering new knowledge. Adams (2010) argues, based on her ethnographic study of the information-seeking activities of millennial-aged undergraduates, that uncertainty can be a positive force in students' search activities, as long as students are taught to accept it as a natural part of the process, and are given tools with which to manage it.

Chowdhury, Gibb, & Landoni (2011) agree with Kuhlthau (1993) regarding the inevitability of uncertainty. However, they challenge the idea that uncertainty inevitably diminishes as a searcher collects and presents their findings. Instead, the heightened learning curve that technology presents for students through both more technical search

tools and the information overload inherent to information seeking in a Web 2.0 world can possibly lead to increased confusion and need for backtracking in the process at any point in the search process.

Chowdhury, Gibb, & Landoni (2011) contend that uncertainty is an endemic and possibly inevitable aspect of the information-seeking process. However, some, such as Nahl (2007) and Berryman (2006; Parker & Berryman, 2007), argue that information-seeking uncertainty is a sign that a student is truly transcending his or her comfort zone of knowledge and learning new ideas and understandings of the world. However, an information searcher who is emotionally unnerved by experiences of uncertainty may choose to end a search early, finding just enough information to satisfy the assignment. A student must have enough confidence in their abilities and intelligence to work through this uncertainty and gain deeper understanding of the topic.

In her ethnographic exploration of two professors' literature searches, T.D. Anderson (2006) digs more deeply into scholarly researchers' experiences of search uncertainty to identify possible distinctions between productive uncertainty that motivates scholars to learn more about a topic and a paralyzing uncertainty that stops information seeking in its tracks. Intriguingly, Anderson found that seasoned researchers experienced uncertainty in both positive and negative forms throughout their literature searches. However, both their confidence in their information search skills and their passion for their topics helped them persist through the grey areas of the search process to successfully gain an understanding of the literature within their topic needed to perform research.

Although T.D Anderson's (2006) research was performed with trained scholarly researchers, it seems likely that the themes Anderson identified would hold true for undergraduate students, particularly when considered in the context of research discussed earlier in this section. If so, then a student that experiences uncertainty likely will gain a fuller understanding of the topic by struggling through information-seeking obstacles. Intriguingly, both Kuhlthau (2004) and Anderson (2006) contend that mediators, or the people searchers consult for guidance during the search process, often provide the search skills, cognitive perspective, and emotional support needed for a searcher to use uncertainty to his or her advantage.

The Role of Mediation Encounters in Resolving Student Uncertainty

Most models of information seeking, with the notable exception of Wilson's (1981, 1999) incorporation of context and information transfer among seekers, seem to envision an individual searcher forging a solitary path towards knowledge. However, as discussed briefly by T. D. Anderson (2006) and in greater detail by Kuhlthau (2004, 2008) many information seekers turn to others for help in the course of their efforts. According to Kuhlthau (2004), students often consult mediators to guide them through their vague thoughts and emotions of confusion. She divides mediators into two types; informal and formal. Informal mediators can include family members, friends, colleagues, and subject matter experts (aside from instructors or professors). Formal mediators are the librarians and faculty members who are students' official resources for help when uncertainty arises during the information search process.

Librarians Advocate for Formal Mediation

In the course of her research, Kuhlthau became troubled by students' overwhelming tendency to select informal mediators rather than formal ones in times of uncertainty (2004, pp. 84-6). Based on her interviews of high school and college students, Kuhlthau argues that students tend to mostly ask librarians for assistance when they need help locating a specific source. On the other hand, students turn to informal mediators to discuss their topics and plan strategies for searching and writing, as well as for emotional support when the writing process gets hard. Although students stated that consulting a librarian or instructor too often would make the work less their own, they expressed a belief that informal mediation encounters strengthened their agency and abilities as developing information seekers.

That said, some students in Kuhlthau's (2004) case study stated that they would have preferred to have been able to have conversations with instructors or librarians like those they had with informal mediators in the early stages of the search process. For that reason, Kuhlthau contends that students selected informal mediators not by choice, but out of a perceived lack of formal support in the earliest phases of the ISP. Kuhlthau called for a process-based, user-centered model of formal mediation. In her model, librarians organize a collection for easy navigation, locate requested information, identify potentially related sources, advise students on the appropriate use of sources, and counsel students on the high-level process of negotiating uncertainty and constructing meaning (2004, pp. 114-20).

Subsequent scholars responded to Kuhlthau's call by developing the scholarship of formal process-based mediation. Limberg & Sundin (2006) argue that information

literacy instructors do not sufficiently incorporate discussion of the types of formal mediation available to students at the library. McKenna (2009) calls on instruction librarians to identify technological barriers that stand between students and sources of formal mediation. Shah & Kitzie (2012) identify ways that librarians can improve formal mediation in a virtual reference setting, and Fourie (2013) calls on librarians to embrace Kuhlthau's zones of intervention (which have received much less attention than her ISP model) as a model for organizing reference services.

All of these researchers added clarity to the process and promotion of formal information search mediation. However, none explicitly provides evidence that librarians are *better* guides for all information seekers and all information search needs than are informal mediators. Instead, all seem simply to assume formal mediators are more effective for or desired by students than informal mediators, beyond a few comments from Kuhlthau's (2004) case study participants, which may or may not be transferable to information seekers in other contexts. Kuhlthau was the first major theorist to approach information seeking from the students' perspective. However, Kuhlthau and her successors did not seem to consider that students' preference of informal mediation might be due to factors other than convenience or awareness.

Students' Preferences for Informal Mediation

In her analysis of undergraduates' use of their social networks in the course of information seeking, Tsai (2012) notes that students tend to consult classmates or teaching assistants when they have course related questions. This is the case even when course professors are available to approach for help. When the data are examined more closely, Tsai's findings are particularly disconcerting for librarians who assert that

mediation consultations with them are inherently more helpful than those with friends and family. The students surveyed by Tsai gave each type of mediator included in the survey a positive or negative score in the areas of formality, friendliness, helpfulness, and profoundness (depth) of the mediation encounter. Although librarians acquitted themselves fairly well on friendliness, and students encounters with them were perceived as less formal than all other university faculty or staff members, students found them the sixth least helpful type of mediator out of the twenty types of mediators included in the survey. It must be noted that Tsai's survey of 25 undergraduates may not be as generalizable as a larger survey would be. However, Tsai's findings are at least as compelling as Kuhlthau's small-scale case study of mediation experiences.

When the literature of information search mediation is taken as a whole, it seems possible that informal mediation encounters may bring their own strengths to the searcher, particularly when it comes to overcoming the affective hurdles of the search that so often lead to less productive manifestations of search uncertainty. The discoveries of information scholars exploring the role of informal mediation encounters in information seeking are reinforced by the theoretical innovations in the emerging field of critical information literacy, a recent offshoot of Freire's (1970) critical pedagogy. Although the theoretical and empirical literature of critical information literacy is mostly focused on bringing problem-posing instruction to the information literacy classroom and the reference interview, Critical Information Literacy implicitly calls the assumed superiority of formal information search mediation encounters into question.

Critical Information Literacy and its Implications for Search Mediation

In my (S. Clark, 2014) exploration of the information-seeking narratives of nontraditional students, research participant “Ashley” shared a provocative story of an information search stymied by uncertainty and fear. During a library instruction class she attended early in the semester, the librarian discussed the multiple ways students could use library resources and staff to find information more effectively. In addition, Ashley’s instructor encouraged her students to seek help and provided additional resources for finding and evaluating appropriate information for scholarly inquiry. Despite all these available resources, Ashley simply became “blocked” (p. 69), and could not overcome her anxiety enough to attempt to explore her topic. When asked why she had not consulted with a formal mediator, Ashley said, “Smart people intimidate me. And people who are in charge of me” (p. 70).

Paulo Freire and the Origins of Critical Pedagogy

As the founder of critical pedagogy, Paulo Freire would have likely sympathized with Ashley’s plight, and might have been dubious of information literacy researchers’ calls for increased formal mediation. Freire (1970) argued that pedagogy as traditionally conceived was little more than a “banking” process. Teachers, as the politically empowered holders and arbitrators of truth, deposit politically approved knowledge into purportedly empty students. The students grow in status within this system of education by accepting the truths offered by the teacher uncritically and quietly (pp. 71-2). Freire argued that students and teachers alike must reframe a pedagogical structure that promotes and sustains structures of social and political oppression. Teachers and students alike can break free of the cycle of oppression by engaging in a “problem-posing

dialogue” (p. 80). In Freire’s proposed scenario, all parties are assumed to possess knowledge that can help others think through and resolve problems, thereby becoming liberated from intellectual (and eventually, according to Freire, political) oppression.

Critical Pedagogy in the Library

Decades later, Elmborg (2006) examined information literacy theory and practice through Freire’s (1970) lens. In an article that became the foundation of the rapidly growing subfield of critical information literacy (Doherty, 2007; Warren & Duckett, 2010; Swanson, 2004; 2011), Elmborg contended that librarians must move beyond simply teaching the research and source evaluation skills that he termed “the grammar of information” (p. 197) to encourage students to question both the information they find and the systems of information management and organization that privilege one type of information over another. Problem-posing information literacy instruction openly acknowledges the academic library’s strengths and weaknesses while embracing new theories of knowledge and learning.

Swanson (2004; 2011) describes such a model in greater detail, combining Elmborg’s (2006) ideas with earlier theorists of other critical literacies such as Lankshear & McLaren (1993), Powell, Cantrell, and Adams (2001), and Endres (2001). According to Swanson (2011), a model of critical information literacy should incorporate six key elements: different creators construct information to serve different purposes; information evaluation is a continual process; different readers interpret information differently depending on their viewpoints; students need many chances to practice information skills; seek to understand information seekers on their own terms; and, “*center libraries within the curriculum as the experts* on overcoming many of the obstacles to conducting

successful research in the ever-changing information world” (p. 891, italics added).

Although Swanson’s proposal of the traits of critical information literacy is promising, he seems to have embedded an assumption that libraries and librarians are the undisputed “experts” in search mediation.

While not specifically responding to Swanson’s proposed traits of a search model, O’Connor (2009b) notes that these types of tensions between the pluralist and neoliberal impulses embedded within the field’s current (Association of College and Research Libraries, 2010) definition of information literacy ultimately call the coherence of the construct into question. O’Connor reminds the reader that cultural theorists such as Foucault (1988) question Dewey’s (1933) pluralist argument that an educated populace will inevitably lead to a more equitable and functional society as little more than an idealist dream. O’Connor contends that notions of liberal pluralism ignore the structural imbalances of power that maintain the status quo, and that pluralists assume that truth is “an objective, demonstrable reality that everyone can ascertain if they simply draw on their ability to evaluate information around them critically” (p. 81). In neoliberalism, education (and by extension information literacy) is conceived of as a means to educate people in social norms, as well as the skills needed to become economically productive members of society. Pedagogy of this nature provides less room for students to reflect and grow intellectually by engaging with information, instead focusing on teaching the many marketable skills that educators believe students will need in the work force.

Not only does O’Connor (2009c) argue that these two belief systems are mutually exclusive, she uses critical pedagogy to call both into question. O’Connor then harkens back to Elmborg’s (2006) critique of most information literacy instruction as merely

teaching “the grammar of information” (p. 497), rather than deep intellectual engagement with the search process and the information that is uncovered over the course of that process. O’Connor closes the article by arguing that the tensions between pluralist and neoliberal theoretical perspectives will eventually threaten the theoretical coherence of information literacy as a construct. She, like Elmborg before her, calls on librarians to consider Freire (1970) as well as Kuhlthau (1991, 2004), Teivainen's (2000) Radical Democracy Theory and Langer’s (1997) Model of Mindful Learning to reconceptualize the construct of information literacy.

In his discussion of the implications of critical information literacy in the community college context, Patterson (2009) confronts the tension implied in Swanson’s (2004) model of critical information literacy pedagogy head-on. In a similar vein to O’Connor (2006, 2009a; b; c), Patterson critiques a paradox he observes within information literacy theory, which he frames as a conflict between increasing students’ critical thinking about information while also reinforcing traditional ideas about the value of different types of information. He notes that librarians are often in the position of providing “free” access to information and information literacy skills on one hand, while simultaneously locking information within cumbersome, password protected security systems required by database vendors. Patterson discusses this and other examples as evidence of librarians’ ongoing struggle to balance the values of mondialization (or a progressive model of education in O’Connor’s words) and globalization (defined similarly to O’Connor’s use of Neoliberalism) in information literacy pedagogy and academic librarianship in general.

Patterson counsels librarians to seek a middle way in their practice, in which they teach students the nuances of the current information landscape, while simultaneously helping them to develop the critical consciousness needed to critique these power structures and to create information of their own. Some practitioners may find this critical pedagogy difficult to adopt, as it requires librarians to have the courage to admit and critique their own roles in what Freire (1970) called the “banking model of education”. However, by providing students with the skills and resources necessary to navigate current systems of information while simultaneously empowering them to critique those structures (and all others in daily life), Patterson argues that librarians will be enabling traditionally disadvantaged students to achieve the education and status necessary to effect transformative changes from within existing power structures.

Ultimately, as Patterson (2009) argues and Accardi, Drabinski, & Kumbier (2010) also assert in their collection of critical library instruction practices, academic librarians must discover and acknowledge the limitations of their abilities as mediators. If librarians are truly committed to a constructivist model of information and intend to guide students toward becoming liberated and truly critical seekers and evaluators of information, then scholars and practitioners must have the courage to turn a critical lens on themselves. For information literacy to continue to make sense as both a professional activity and a pedagogical tool of enlightenment, academic librarians cannot attempt to have it both ways.

Building on that implication, it seems unlikely that information seekers categorize the mediators as “formal” or “informal”. This binary opposition certainly does not originate in students’ behaviors, but in Kuhlthau’s attempts to build a model of the

different levels of formal search mediators. Information seekers' continuing choices to consult different mediators in different ways from those that librarians might suggest do not necessarily indicate a lack of education on the part of students. In fact, upon taking on the humility recommended by scholars and promoters of critical information literacy it seems quite possible that information seekers may experience information search mediation encounters very differently than academic librarians think they do. Although neither directly discusses search mediation, two recent publications from theorists of Critical Information Literacy suggest intriguing new ways to understand information seeking.

Olson-Kopp and Kopp's traits of a critically conscious information seeker. In their discussion of the role of library instruction in the development of critical consciousness, Olson-Kopp and Kopp (2010) describe information literacy instruction as currently performed within the banking model of education as "a transfer of objects that fosters the development of skills in the service of others" (p. 56). The authors then draw on critical pedagogy to critique and reframe this model within a context of a problem-posing pedagogy, describing three abilities and stances toward information that would be key aspects of a critically conscious information-seeking perspective.

First, a critically conscious information seeker has reframed information as a physical representation of another person's thoughts and ideas that can be engaged with and questioned, rather than as a consumer good to be located and passively consumed. Second, the authors contend that critically conscious information seekers transcend the mechanistic skills of searching databases and citing sources. They also critically examine both the social and historical contexts in which given information sources were created,

as well as the values that the creator of the information is trying to reproduce or resist in the work. Finally, critically conscious information seekers perceive themselves as co-investigators in a search for information, rather than as customers passively absorbing an information literacy lecture or asking for help at the reference desk with accessing a source. It is important to note that the authors do not describe these traits as a theoretical model per se. However, their concept of a critically conscious information seeker could be a useful lens through which to view the ways in which students experience information seeking in general, and search mediation encounters specifically.

Olson-Kopp and Kopp (2010) admit that it is particularly difficult to promote the traits of critically conscious information seeking within the limitations of a one-shot library instruction session. While the authors go on to describe a problem-based learning pedagogy that could be implemented in a library instruction session, it seems possible that these sessions by their very definition might not actually be a conducive environment for students to become more empowered and critically conscious information seekers. However, when these traits are viewed in the light of the existing research on search mediation discussed earlier in this review, it seems possible that one-on-one consultation with a mediator outside of a classroom context might foster an environment more amenable to the empowerment of critically conscious information seekers. In the same year, Elmborg (2010) explores this very issue; discussing ways that reference librarians can work with information seekers to develop a problem-posing dynamic within one-on-one search mediation.

Elmborg's Multiple Literacies. Early researchers working in the critical information literacy paradigm such as Olson-Kopp and Kopp (2010) and Swanson (2004;

2011) focused on discovering and creating models for what critical information literacy looks like, and what libraries can do to teach these skills to students. Elmborg (2010), in a follow-up piece to the 2006 article that effectively launched the paradigm of Critical Information Literacy, contends that researchers have overlooked the most important aspect of the development of critical information consciousness—the various cultural literacies that the student herself brings to the information search. According to Elmborg (2010), despite scholars' attempts to revise information literacy theories and practices to incorporate the tenets of critical pedagogy, most research is geared toward understanding and changing librarians' practices and teaching objectives. However, Elmborg argues that emerging theoretical and practical models still neglect two key aspects of Critical Information Literacy-- the multiple types of knowledge and experiences brought to the information search by the seeker, and the constructivist process of knowledge creation that can take place when both seeker and mediator approach a search mediation encounter as equals, not a teacher and a student.

Elmborg (2010) contends that librarians' educational mission must go beyond delivering the 'correct' information product to a passive library patron, or customer. "To be clear, I do not advocate that we abolish correctness as a standard, but rather that we need a human connection with someone, to understand the way they view the world, where their question or problem is coming from" (p. 74). By digging deeper into a simple request for information and engaging in a deeper and more equal conversation of the matter at hand, Elmborg contends that librarians and information seekers can subvert both the transactional dynamic of their interaction, and the power differentials inherent in the "banking model" (Freire, 1970) of education.

Elmborg (2010) makes three suggestions to reference librarians at the end of his article, all of which seem relevant to anyone engaging in a mediation encounter with an information seeker. First, Elmborg suggests that librarians try to close the teacher/student gap somewhat by respecting the knowledge and perspectives that students bring to a mediation encounter, and to attempt to turn a one-way information transaction into a two-way conversation in which knowledge is jointly constructed.

Second, rather than making assumptions about the people who ask for help, librarians should attempt to find out what a person already knows and feels about the search due to previous search activities as well as any cultural assumptions. A mediator also needs to take time to ascertain a seeker's proficiency at the searching process itself. Based on this initial information, mediators can engage with the information seeker at the seeker's own comfort level, further lessening the power dynamic and addressing a seeker's search uncertainty in the process.

Finally, librarians need to avoid enforcing their assumptions about the "right" way to undertake an information search. Rather than focusing on teaching searchers how to find what they need and to evaluate it properly, librarians should create an environment where information seekers can effectively learn, and provide guidance where needed on the journey. This distinction is a subtle one, but Elmborg (2010) argues that it is a crucial factor in empowering information seekers to take control of their educations.

The ACRL Framework for Information Literacy

Although the literature of critical information literacy has not yet directly addressed information search mediation, one can perceive a “perplexing and enigmatic state” (D. L. Clark, Guba, & Smith, 1977, p. 7) in the literature explored above.

Mainstream scholars of information seeking such as Carol Kuhlthau (1991, 1993, 2004, 2008) call on librarians to embrace the user's perspective, while simultaneously urging them to continue to educate students about the superiority of formal mediators in combating search uncertainty. However, scholars of information literacy seem to have overlooked the possibility that uncertain information seekers may find much of value in informal mediation encounters as well. This oversight is particularly disturbing in the light of both Critical Information Literacy as well as empirical evidence that librarians may not be the "expert" mediators that they have assumed they are.

In the spirit of critical information literacy and critical pedagogy, this research does not focus on librarians' strengths and weaknesses as mediators, nor on validating or complicating an *a priori* model of search mediation. Instead, the study will focus on exploring the experiences of students who engage in search mediation encounters, and the role that these experiences play in students' information search processes. However, I will examine the cross-case findings of the study through the lens of the new (2015) ACRL Framework for Information Literacy, in an attempt to understand what light the Framework may shed on students' information-seeking experiences, and vice versa.

As O'Connor (2006) notes in her historical survey of paradigm shifts in librarianship since the emergence of library computing systems in the 1980s, information on nearly any topic, rather than being limited to library collections, is now available to nearly anyone at a click of a mouse. However, librarians contend that most users lack the skills needed to define an information need, commonly referred to as information literacy. In order to be considered information literate, users must be able to efficiently search for information that addresses the need within a massive pool of data and critically

evaluate information for potential inclusion in his or her knowledge base (Association of College and Research Libraries, 2000). Rather than gaining access to a small and carefully curated collection of high-quality, highly relevant information, a searcher must dig through a haystack of data to find one or two needles that will suit his or her needs.

In response to this evolution in information technology, librarians are now focusing much more time and energy on teaching patrons the information literacy skills needed to find and evaluate information located in the broader information landscape as well as within the library building and online resources. In November 2014, the Association for College and Research Libraries released the final draft of the new *Framework for Information Literacy for Higher Education*, a document intended to replace the information literacy Standards published in 2000. In an attempt to reframe information literacy and the pedagogy of library instruction to better meet the needs of current students, information literacy was redefined as including not only a set of skills, but a cognitively, emotionally, and practically flexible approach to information seeking informed by a practice of metacognition, or thinking about one's thought process (2014c, p. 2). The ACRL identified six threshold concepts through which college students should learn to engage with the information environment:

- Authority Is Constructed and Contextual
- Information Creation as a Process
- Information Has Value
- Research as Inquiry
- Scholarship as Conversation, and
- Searching as Strategic Exploration.

Some experts, such as Oakleaf (2014) and Swanson (2015), land firmly on the positive side contending that designing library instruction around threshold concepts would allow librarians to decrease their focus on the tools of information seeking, and more time on the higher level skills of information seeking and evaluation. Others, such as Morgan (2015) and Beilin (2015), voiced concerns about the theoretical rigor of both the threshold concepts included in the Framework, as well as the underlying foundation of Threshold Concepts as conceived by Meyer and Land (2003). In addition to scholarly articles and commentary, the Framework's highly public development process spawned dozens of blog posts exploring the merits and drawbacks of the draft Framework (e.g. Berg, 2014; Farkas 2014, 2015; Fister, 2014a; b; Hovious 2014). The debate continued throughout 2014 in countless tweets in the very active #critlib and #ACRLframework hashtags, which serve as discussion spaces regarding Critical Information Literacy and the ACRL Framework respectively. As the development process continued in three drafts throughout 2014 (a; b; c), the committee incorporated changes to address widespread confusion about threshold concepts as well as skepticism about their usefulness in designing and assessing information literacy instruction (Wilkinson, 2014; Townsend, Lu, Hofer, and Brunetti, 2015).

In the final weeks before the scheduled date for the vote on final adoption of the Framework in January 2015, more practical concerns emerged. These arguments were embodied in a widely circulated open letter (Dalal, 2015). In the weeks leading up to the decision, over 350 academic librarians and scholars of information literacy added their signatures to the letter, which asked the leadership of ACRL not to discard the 2000 Standards for Information Literacy in place of the Framework. Dalal argued that a hasty

retirement of the 2000 Standards would undermine curriculum design and assessment efforts. Worse, Dalal and the cosigners of the petition contended that abandoning the Standards for the Framework could potentially damage academic libraries' authority in the eyes of neoliberal institutions and accrediting bodies.

Ultimately, the Framework was "filed" by the ACRL in January 2015 rather than fully approved, in order to gather more feedback and determine the best course for future action. After early engagement with the Framework in contexts that varied from medical libraries (Knapp and Brower, 2014) to theological seminaries (Badke, 2015) met with both success and challenges, the Framework was officially adopted by ACRL in January 2016. However, the 2000 Standards were not superseded for the time being. As of this writing in early 2016, both documents will remain part of the information literacy best practices of the association for the near future.

The Framework will provide information literacy practitioners and researchers with a theoretical foundation for understanding information literacy, and the standards will remain, though eventually in a revised form, as a practical structure for information literacy curriculum design and assessment which lends itself to ease of understanding for non-librarian stakeholders. By viewing my findings through the ACRL Framework, I will provide early insights into the ways the Framework may or may not help students to find the information they need, and to interact with that information in a critically conscious way. I will also examine this emerging Framework through the lens of my participants' lived information-seeking experiences, in an attempt to understand the ways in which the Framework does and does not describe the lessons students learn through their experiences of search mediation.

Summary

A review of the literature of information seeking demonstrated that there is a lack of understanding of the roles different types of mediators play during the information search process. This oversight in the literature, in turn, may be due in part to a paradox found at the center of academic librarianship's construction of the concept of information literacy. This literature review was conducted by consulting key books, journal articles, and other scholarly literature pertaining to information seeking, uncertainty, search mediation, and the emerging theory of Critical Information Literacy.

Numerous scholars of information literacy have attempted to build or refine models of the information-seeking experience, most notably Ellis (1989), Bates (1989), and Wilson (1981, 1999). However, Kuhlthau's (1991, 1993, 2004, 2008) model of the Information Search Process (ISP) has emerged over the past two decades as the most heavily tested and used model of information seeking, particularly in the context of student and scholarly information searches. This review provided a summary of the numerous studies that tested or used Kuhlthau's model to examine the cognitive, process, and emotional search experiences of undergraduates.

In the review of this body of empirical literature, it became clear that uncertainty is the central force that motivates students as they negotiate the ISP. However, as Kuhlthau (1993) herself notes, uncertainty can be either a motivating or frustrating force in the course of information seeking, depending on how a seeker experiences and manages the corollaries of process, formulation, redundancy, mood, prediction, and interest. Although uncertainty is often discussed as though it is always a negative aspect of information seeking, scholars such as T. D. Anderson (2006) contend that uncertainty

is more than a necessary evil. In fact, uncertainty may actually be a sign that an information seeker is truly leaving his or her comfort zone in the course of the search. According to these scholars, uncertainty may be an indicator that students are actually making new knowledge and meanings from the information discovered in the course of the search, rather than merely seeking out information that bolsters their preconceived notions.

However, information seekers often choose to consult with other people for assistance and support during the search process. Kuhlthau (2004) notes that students in particular tend to consult both formal and informal mediators in the course of their information searches. For that reason, she argues for an improved process for formal mediation. Although numerous scholars have attempted to improve the theory, practice, and promotion of the formal mediation services provided by academic libraries, some students continue to prefer to consult informal mediators. In addition, some research suggests that students find informal mediators more helpful than librarians in their search process.

The problem of interest to this study could possibly be explained by examining students' mediation encounters through the lens of Critical Information Literacy. Developed by Elmborg (2006) as an offshoot of Freire's Critical Pedagogy, Critical Information Literacy calls into question the privileged status of libraries and librarianship. Theorists such as Swanson (2004, 2011) call for a problem-posing information literacy pedagogy, and O'Connor (2006; 2009a; b; c) takes his critique one step further, identifying an untenable theoretical tension between pluralism and neoliberalism that lies at the heart of librarianship's definition of information literacy.

Olson-Kopp and Kopp (2010) shift their focus from the librarian to the student, proposing three key traits of critically conscious information seeking. Elmborg (2010) discusses the ways that librarians can incorporate critical information literacy into their daily activities. The Association of College and Research Libraries has responded to the changing landscape of information technology and theory, and is drafting an information literacy framework that appears to both bolster and undermine aspects of the critical information literacy paradigm.

Building on both this thread of literature and the research problem of formal and informal search mediation, it seemed possible that these three strands of theory, practice and policy could be used as lenses on students' experiences of mediation encounters, lighting up issues related to theory, research, and practice of search mediation. By understanding the events that take place and the benefits conferred by different mediation encounters, it may become possible to begin to redefine the conceptual framework of information literacy by gaining a greater comprehension of students' experiences during formal and informal mediation encounters.

CHAPTER III

METHODOLOGY

This discussion of the methods for this qualitative case study will open with the general perspective of the research design as indicated by the research problem, purpose and questions, as well as my epistemological worldview. I will then provide a brief overview of the research context as well as criteria for the selection of participants. Given that the key instrument in qualitative research is the researcher herself, I will briefly discuss my role and positionality in the research process. The final sections of this chapter will consist of descriptions of the procedures that I used to collect and analyze the data for the study, as well as the way in which I used the Association of College and Research Libraries' (ACRL) Framework for Information Literacy in Academic Libraries as a theoretical framework for my findings. The chapter will conclude with a brief summary of the research methods.

General Perspective of Research

According to Creswell (2009), in addition to one's audience, a researcher should consider two key issues when selecting a quantitative, qualitative or mixed research design. First, and most importantly, a researcher must consider the problem to be explored, as well as the purpose of the research and the research questions. Second, a researcher must consider his or her own worldview, its basic considerations, and how those considerations influence his or her approach to the problem.

Statement of Research Problem

Kuhlthau (1993, 2004) defines information-seeking uncertainty as a cognitive state commonly experienced in the early stages of the information search process due to a lack of sufficient understanding of the phenomenon that the information seeker is attempting to investigate. An information seeker's unfocused thoughts can lead to emotions of anxiety, confusion, and a lack of confidence. Kuhlthau and subsequent scholars of uncertainty (Genuis, 2007; Brumfield, 2008; Adams, 2010; Chowdhury, Gibb, and Landoni, 2011; Kamal and Burkell, 2011) contend that experiences of uncertainty, which are particularly common to novice searchers, can often frustrate further search activity. Kuhlthau (2004) argues that formal mediators such as librarians are best equipped to teach students the skills needed to overcome uncertainty by providing instruction in information literacy skills useful in navigating common cognitive, affective, and procedural roadblocks.

However, Kuhlthau (2004) also noted that information seekers are far more likely to consult with informal mediators, such as parents, friends, coworkers, and experts. Scholars and librarians (Limberg & Sundin, 2006; McKenna, 2009; Shah & Kitzie, 2012) have tried to address a situation they perceived as counterproductive for information seekers by exploring ways to improve both information literacy curriculum and outreach. Despite these efforts, researchers such as Tsai (2012) have observed that students not only still prefer to consult people that are not considered formal mediators by Kuhlthau's definition, they find these informal mediations more helpful than talking to librarians.

The "perplexing and enigmatic state" of affairs (Clark, D. L, Guba, & Smith, 1977, p. 7) described above suggests that current literature on the information search

process and information search mediation may not fully or accurately depict the aspects of search mediation that are actually the most important to information seekers. Recently, proponents of critical information literacy such as Elmborg (2006; 2010; 2012), building on the foundational work of Freire (1970), critiqued instruction librarians' emphasis on information transfer at the expense of the development of critical information consciousness, and the habits of mind needed to both find and critically engage with the information they need. Upon juxtaposing the literatures of search mediation and critical information literacy, it seemed that an in-depth study of students' experiences of search mediation encounters and their perceptions of the role of mediation encounters within the information search process as a whole could shed light on this problem. A resolution to this perceived problem could provide guidance for librarians seeking to better serve students, and for theorists and researchers attempting to understand how search mediation encounters help students navigate the thoughts, feelings, and actions of the information search process.

Purpose of the Study

The purpose of this study was to explore lower-division undergraduate students' thoughts, feelings, and actions as they engaged in and reflected on their information search mediation encounters over the course of a course-related information search process.

Research Questions

Based on the research problem and purpose, this study explored two main research questions.

1. What are the characteristics of information search mediation encounters as experienced by lower-division undergraduate students?
2. How do students use search mediation encounters to navigate the information search process?

Overview of the Study

As Creswell (2009) notes, a researcher's research design choices should be based on the questions under exploration, as well as the epistemological worldview and experiences of the researcher, and the researcher's sense of the needs of those who will be reading the study. This section of the chapter will provide an overview of the epistemology, research design, theoretical perspective, methodology, and strategy of inquiry for the study.

Researcher Worldview

My personal epistemology (Hofer & Pintrich, 2004) is a version of pragmatic constructionism influenced by both Dewey (1933) and Bourdieu (1977). I contend that people come to understand concepts most effectively through experience, and that the experience of coming to understand an experience of an issue can sometimes effect change in the issue being examined as well as in the subject. In addition, different and equally valid interpretations of reality may emerge depending on the perspective of and theoretical lenses employed by viewers. For this reason, knowledge is often constructed and codified through social processes and group consensus, based on how well it describes or influences events in the outside world (J. A. Anderson, 1996).

Qualitative Research Design

According to constructionism, “meaning comes into existence in and out of our engagement with the realities in our world” (Crotty 1998, p. 8). Different people can and do give different meanings to the same external object, depending on their perspective, culture, and viewpoint. Broadly speaking, constructionists hold that a concept can be best understood by accepting all meanings ascribed to it as valid, and by capturing a variety of different meanings that people have constructed around the object, it is possible to gain a fuller understanding of those meanings singularly and collectively. By approaching the research problem from a constructionist stance, it seems possible that by exploring students' experiences of information search mediation, researchers and practitioners could gain a clearer understanding both of the interactions themselves, and of the role those interactions may play in successful navigation of the information search process.

Theoretical Perspective

Theoretical perspective is a philosophical stance that flows from the epistemological viewpoint of the research questions and purpose of the study, and in turn informs the methodology and method of the research (Crotty 1998, p. 3). Theoretical perspective “provides a context for the process involved, and a basis for its logic and criteria” (p. 66). This study is based in the epistemological notion that knowledge is continually constructed in a historically positioned process of interaction between a subject and the wider world. Therefore, the methodology and methods of research must incorporate forms of inquiry that are designed to capture this meaning-making process.

This study was based in an interpretivist symbolic interactionist framework. Interpretivism is rooted in the concept of *verstehen*, or understanding (Crotty, 1998). Interpretivists argue that unlike the natural world, human and social structures cannot be

understood through a descriptive process of counting or measurement. Instead, the social scientist must attempt to understand the viewpoint of people and groups by interpreting the meanings of their actions and statements. Meaning is thus inductively derived from researchers' understandings and interpretations of the people around them, rather than being deductively extrapolated from the researcher's own previously-held beliefs and opinions. Interpretivist researchers do not claim an ability to objectively assess an externally existing reality. Instead interpretivists admit and clarify their positionality, as I will do later in this chapter.

Symbolic Interactionism, an offshoot of pragmatist epistemology, is the theoretical perspective that informs the study. George Herbert Mead, the social psychologist and father of symbolic interaction, disagrees with earlier psychologists who contended that individuals create cultures and social groups by joining together in a common goal. Instead, "A person is a personality because he belongs to a community, because he takes over the institutions of that community in his own conduct" (Mead, 1934, p. 162). In the case of the students whose search processes were explored in this study, they were attempting to learn the processes and knowledge needed to become part of the intellectual community of a Composition II classroom. Successfully acquiring the writing and information-seeking skills taught in Composition II, and acquiring to other unspoken norms taught in college, gains a student entry into higher level courses, and eventually a diploma.

For Mead (1934), a person's understanding of the world (and by extension consciousness) is constructed through uses of symbols such as language, actions and objects to interact with that broader community. Herbert Blumer, Mead's student, took

his mentor's thoughts a step further, refining them into the three key tenets of symbolic interactionism:

1. That human beings act toward things on the basis of the meanings that these things have for them;
2. That the meaning of these things is derived from, and arises out of, the social interaction that one has with one's fellows;
3. That these meanings are handled in, and modified through, an interpretive process used by the person in dealing with the things he encounters. (Blumer 1969, p. 2)

This study explored the ways in which students interact with search mediators during the course of an information search undertaken for a Composition 2 research project. More specifically, I explore how students use these mediation experiences to make sense of information search process, and to potentially become more critically conscious evaluators and synthesizers of information. Symbolic interactionism is specifically concerned with an actor's view of a situation, above all else. As Denzin explains, "Methodologically, symbolic interactionism directs the investigator to take, to the best of his ability, the standpoint of those studied" (1978, p. 99). By gathering thick, rich descriptions of students' experiences of information search encounters, and discussing students' impressions of the importance of these encounters within the context of an information search, I engaged in dialogues with students that allowed me to "become aware of the perceptions, feelings, and attitudes of others and interpret their meanings and intent" (Crotty 1998, p. 75-6).

Methodology and Definition of Cases

This research study employed a multiple case study design as described by Stake (2006). As Gay, Mills, and Airasian (2008) note, case study design is appropriate for such an in-depth study of instances of phenomenon as experienced by individuals. A multiple case study approach (Stake, 2006) is particularly appropriate for this study. It is designed for situations where, as in this research, each student's search process, which would likely contain multiple incidents of information search mediation, could be explored as a separate unit of examination. For the purposes of this study, I define a case as a single student's information search as defined by Kuhlthau's (1991, 1993, 2004) model. Each case includes all experiences that occurred between search initiation and continues to completion of the required assignment, as well as implications that a student believes those experiences had or will have for future information searches.

In Stake's (2006) discussion of multiple case study methods, he notes that the first order of business after identifying the problem and questions to be explored is to identify the "Quintain", or central issue of interest (p. 6) as well as a set of individual cases that both share a common condition or contest, and also somehow depict, enact, or exemplify the quintain. In this study, the quintain is the interaction known as information search mediation, as seen within the context of students' information processes for a course-related assignment. Each student's search process is considered an individual case within this study of information search mediation.

Procedures and Methods

Over the course of the study, I attempted to gain a fuller understanding of students' lived experiences of information search mediation during what was many

students' first in-depth college-level information search. This section will outline the research methods used in this study. After beginning with a rationale for selecting a community college as a site for a study of early undergraduate information seeking, I will provide a brief description of Urban Community College. As was discussed in chapter 2, newer undergraduates students are more likely to experience uncertainty and, therefore, to consult both formal and informal mediators. For this reason, Composition II students were particularly appropriate participants for this study. Finally, after a brief discussion of my positionality as an academic librarian, I will describe the data collection and analysis methods for the study, as well as my rationales for those methods.

Research Site

Although this study is designed to provide a picture of information search mediation which could be extrapolated to lower-division undergraduates in other contexts, these participants all attended the same institution. Therefore, the context of the research site will color their experiences in particular ways. I conducted this study at Urban Community College, a community college system in the southern United States. UCC is a large, four-campus system with approximately 35,000 part-time and full-time lower-division students (Urban Community College, 2014). Such a site seemed ideal for a research study focused on the information search mediation encounters of lower-division undergraduate students. As is noted in a report sponsored by the American Association of Community Colleges and the Lumina Foundation (Mullin, 2012), community colleges are becoming an increasingly popular starting point for students planning to complete a four-year degree. In fact, as discussed in Chapter 1, UCC is the

only school in the city where a student can complete lower division undergraduate coursework.

In addition to its growing importance for college completion, the community college environment possesses some unique characteristics which seem relevant to a study exploring the social dimensions of information seeking. Karp, Hughes, and O'Gara (2008) describe some of these traits in their examination of the relevance of Tinto's (1975; 1987; 2006) model of college student persistence to the community college setting. Prior to Karp, Hughes, and O'Gara's work, conventional wisdom held that social integration was less important in community college persistence, due to the more transient, non-residential nature of most community colleges and their students. However, the authors found that integration into a social network was at least as important for community college students as it was to other types of undergraduates. Especially noteworthy given the topic of this dissertation, the authors found that information networks, or interpersonal connections between students where institutional and academic information was shared, appeared to be very important aspects of successful community college integration (p. 8).

Building on the exploratory work of Karp, Hughes, and O'Gara (2008), Price and Tovar (2014) performed a quantitative multiple regression analysis that appeared to validate the tentative findings of the earlier exploratory study. Among other findings, collaborative learning practices appeared to be a strong predictor of community college student success. When the findings of these two studies are considered in the light of the research problem, purpose, and questions, the community college context appears

particularly appropriate for exploring the collaborative and social aspects of information seeking, such as information search mediation.

UCC is a diverse community college, with four campuses and outreach centers located in urban, suburban and rural settings throughout the Urban metropolitan area and its surroundings. UCC is also a feeder institution for several nearby colleges and universities that offer upper division and graduate coursework. In other words, students' educational experiences at UCC will have implications for student success not only at UCC, but at the local transfer institutions popular with UCC students. After the completion of the proposal and IRB process, I conducted this study in April and May of 2015.

Research Participants

Composition II students must have demonstrated basic competence in college-level writing in order to have passed Composition I. However, students in the course are still relatively inexperienced information seekers at the college level and are therefore likely to experience uncertainty in the information search process. Focusing on Composition II students allowed me to get a close look at the early information search experiences of emerging lower-division information seekers who are still growing into the information seeking skills they will need to survive as undergraduates. For this reason, this research focused on the information search experiences of eight undergraduate students enrolled in three different sections of Composition II at UCC in spring 2015. This number strikes a reasonable balance between incorporating a variety of experiences and perspectives on information search mediation, while also generating a manageable amount of data for analysis. Of the students who respond to emailed and in-

class calls for participation, a maximum variation sampling strategy (Creswell, 2007, p. 127) was used to select participants representing a wide variety of genders, ages, and instructors. Participants were only selected for this study if they were taking Composition II for the first or second time. Interviews focused on their lived information search mediation encounters as well as their experiences while performing information seeking for Composition II assignments. In addition, I performed participant observations of class meetings and study sessions. The details of data collection and analysis will be discussed below, after a brief discussion of my positionality as the research instrument for the study.

Reflexivity Statement

As Patton (2004) notes, “Reflexivity has entered the qualitative [research] lexicon as a way of emphasizing the importance of self-awareness, political/cultural consciousness, and ownership of one’s perspective” (p. 64). Because qualitative analysis is grounded in the notion of researcher as instrument, a brief reflective discussion of my positionality provides a necessary insight into the choices and perspectives that may influence data gathering and analysis.

I am an academic librarian at a regional public university in the state of Oklahoma. As a librarian at an institution with a large number of nontraditional, first-generation, and otherwise at-risk learners, I have a personal and professional interest in understanding the strategies students use to navigate the information-seeking process. I also want to use my professional and academic skills to share techniques that will help students achieve their college goals. My formal education and later independent study as a new academic librarian was typical, with a theoretical grounding in Karl Popper,

Ranganathan, John and Melvil Dewey, Kuhlthau's information search process, Bloom's Taxonomy and similar staples of pragmatic and progressive educational and information theory. Although I have established relationships with librarians and faculty at UCC, I have never worked there and did not select participants whom I know.

I found that my positionality, overall, was an asset for this study. Because I am a scholar and practitioner of information literacy instruction, my perspective as a librarian may have been an asset in following particular nuances in search mediation experiences less organic to a non-librarian. I have a deep knowledge of both the theories and realities surrounding information seeking. In addition, ten years of assisting students in reference interactions has taught me many of the common road blocks of course-related information seeking. I was able to understand the issues the participants were dealing with, and communicate with them effectively in interviews to dig more deeply into the nuances of the search mediation experiences.

That said, I recognize that my own passion about the role of information literacy in student academic integration and success could influence my research choices. I was conscious of ways that my perspective could affect the data shared by participants, as well as my analysis of the data. I maintained a researcher reflection journal to make these issues of positionality in data gathering and analysis as explicit as possible, and to limit the potential for my opinions to drown out the voices of the students whose experiences I will explore. My notes served as background information as I compiled and analyzed the data on each case and considered what they collectively suggested about the quintain. By journaling about my emotions and reactions throughout the data collection and analysis

process, I was better able to discern moments when I inadvertently imposed my meanings onto participants' lived experiences.

In addition, for clarity of reading and in the spirit of qualitative inquiry's explicit treatment of the voice of the researcher-as-narrator as another source of data worthy of analysis and critique (Wolcott, 2009), I presented my actions and choices during case reports in first person, though only when such researcher information is essential to understanding students' information search experiences more fully. As Wolcott argues, "Recognizing the critical nature of the observer role and the influence of his or her subjective assessments in qualitative work makes it all the more important to have readers remain aware of that role, that presence" (p. 17).

Data Collection Procedures

Creswell's (2007), Patton's (2004) and Wolcott's (2009) work on qualitative research design influenced the selection and design of study procedures, as did Stake's (2006) text on multiple case study methods. All participants in this study were current Composition II students at Urban Community College.

Recruitment and protection of participants. After Institutional Review Board (IRB) approval, I consulted with interested faculty members, eventually gaining entry into three sections of Composition II taught by two different instructors. My plan was to observe class sessions, study sessions, and other meetings. The first time I observed each class section, 1-2 meetings before students began work on their major research paper, I introduced myself, described my project, and shared a request for participants (see Appendix A). Of the students who expressed an interest, a maximum variation sampling strategy (Creswell, 2007, p. 127) was used to select eight participants. Each participant's

search experiences, as both observed and described by the student in interviews, consisted of a discrete case within the multiple case study.

Once selected, I gave each student an information sheet explaining the informed consent process, and asked them to sign the form indicating their consent to participate in the study. Each participant was assigned a pseudonym to be used in transcripts and memos. Consent forms were maintained separately from the data, to protect confidentiality. All identifying information was stored on an encrypted and password-protected portable hard drive at my home.

Classroom, library, and study group observations. I performed three observations of each participant during class meetings and group study sessions, in order to observe and document any search mediation encounters that took place. I drew on Emerson, Fretz, and Shaw's (1995) text on ethnographic methods to jot impressions while in the field. These jottings were expanded into field notes (See appendix F for field note template) immediately following each observation.

Interviews. As soon as could be scheduled after the assignment due date, each student participated in a 30-45 minute open-ended, semi-structured interview discussing his or her information search experience. I held the interviews at a site convenient to both the student and myself, ideally a library study room or similar private space on campus. After completing a brief demographic profile (See appendix C), I asked students to share their experiences of consulting formal and informal mediators. They had the opportunity to describe contexts or situations that might have influenced their information search experiences. The study interview guide is provided in Appendix D.

Participant Drawings. After the interview, I allowed participants approximately 15 minutes to draw a picture depicting their experiences related to the information-seeking experience and the influences of different mediation encounters. Students were asked to explain the drawings to me in their own words. Drawing instructions and other parameters of this exercise are provided in Appendix E. This method, as discussed by Kearney and Hyle (2004), typically causes participants to explore the emotional aspects of their experiences more fluently, and also serves as a means to triangulate interview data. Further, Mannay (2010) contends that visual data generated by participants can challenge a researcher's inadvertent tendencies to make assumptions about a familiar population or research topic. In the case of this study, visual data were a particularly potent tool to challenge my positionality as a librarian as well as any resulting tacit assumptions about students' information-seeking experiences by "making the familiar strange"(p. 94). I found that these drawings, especially because they were completed immediately after the interviews, led to deeper, more poignant conversations about the emotional aspects and contexts of the 8 information searches explored in this study.

Course Syllabi, Finished papers, Work notes, and other Documents or Artifacts. I acquired a copy of the course syllabus and assignment description from each instructor whose class(es) I observed over the course of the study. In addition, I asked students to provide copies of their finished papers, any research notes, and other documents or artifacts they felt might be relevant to their information search experience. I printed or scanned these documents at my own expense, and analyzed them for potential relevance to the case report for that student.

Data Analysis Procedures

Following the informal, preliminary analytic work of journaling and brainstorming that took place at the same time as my data collection, I transitioned to a more focused and formalized data analysis. Despite knowing that the analytic process would be influenced by the data collected over the course of this study, I approached the analysis process with a basic road map. As suggested by Patton (2004, p. 440-2), I began the data organization process by transcribing the audio recordings of participant interviews, deleting or changing identifying information and replacing names with pseudonyms. I also verified that all other data (such as observation field notes) were complete and included necessary metadata, such as dates, times, pseudonyms of participants observed, and locations of observations.

At the same time I collated and organized the data as a whole, I made multiple print and digital copies of all anonymized data (including participant drawings). One copy was stored on my home office computer and imported into NVIVO qualitative analysis software. Print copies of data were generated as needed. A second digital copy was stored on a portable flash drive in a locked cabinet in my home office along with a clean copy of all data and the original participant drawings. A third set of digital and print copies were securely stored at my workplace.

My researcher journal, class syllabi, assignment descriptions, and other data relevant to multiple cases or the quintain as a whole were consulted as appropriate throughout the creation of both the case reports and the cross-case analysis. I used these general data to uncover additional nuances of the case-specific findings and cross-case assertions that emerged during the analysis process. The journal was updated throughout

the analysis process, and served as a check against researcher positionality overwhelming the meanings expressed by the participants and preserved the timeline of my evolving thought processes during data collection and analysis.

Case Reports. After completion of this preliminary organizational work, I wrote a case report for each of the participants' information searches (i.e. cases), in random order. In addition to an introduction to the sites and non-participant individuals (such as faculty members and select search mediators) relevant to multiple cases within the study, these case reports comprise chapter 4 of this dissertation. To create each case report, I reviewed the student's interview transcript as well as the drawings generated by that participant, observation field notes, relevant portions of my researcher journal, and any other relevant documents and artifacts gathered during data collection.

At this early stage, preliminary findings for that case began to emerge from the data, which were noted for further exploration during the drafting of the case report. In addition, some pieces of data appeared to be more significant to the research questions than others, and receive closer attention in the case report. Each case report consists of a narrative description of the student's information search journey, followed by closer analyses of particularly relevant mediation encounters or other data that is particularly evocative of the case.

Cross-case analysis. During the cross-case analysis, I identified cross-case issues relevant to the research questions, or "themes" (Stake 2006, loc. 1134), that emerged by considering each of the cases as data points within a larger whole. I then developed six assertions that addressed each of the themes that emerge from the analysis. The analysis took the form of a case-quintain dialectic. My focus turned from case-specific details to

quintain-level concerns and back throughout the analysis process, with each perspective serving as a check on the other. Stake (2006) provides three possible "tracks" (loc. 1222) for cross-case analysis. Each procedure offers a slightly different emphasis on preserving case-specific findings versus ease of determining a small number of straightforward cross-case assertions. Given the nature of dissertation research, the purpose of the project, and the relatively small number of cases and expected themes, I used Stake's cross-case analysis track 1. This method best preserves the voices of participants and individuality of case findings throughout the analysis process.

After taking a short break from analysis to reset my perspective from a case-level to a quintain-level perspective, I made a preliminary list of potential themes indicated by the research questions and any notes made during the case-level analyses. After reading each case report, I summarized each case on a short worksheet (appendix G), and then consider the summaries as a whole. At this point, unexpected themes that emerged inductively were added to the master list, *a priori* themes were revised as needed. I rated each case for possible relevance to each of the final list of themes (see appendix H for worksheet). I rated each of the cases' findings in a similar manner (see appendix I).

After this deep focus on cases and findings, I shifted my focus to the themes, narrowing down the list to the most useful cases and findings for constructing assertions for each theme in turn. I particularly noted any atypical cases or findings that complicated or contradicted other evidence relevant to the theme. I then drafted at least one tentative assertion for each theme. These assertions accounted for atypical cases, and said something important about the theme as well as information search mediation as a whole. After taking another break, I reviewed all case-specific and cross-case analysis to ensure I

had not missed any potential assertions. I then revised, merged, and discarded assertions as appropriate. Finally, I ranked the finalized assertions in order of relevance to the quintain. Rather than attempting to capture all possible assertions regarding the quintain, I selected the six most important and interesting assertions for an in-depth exploration and critique.

Chapter 5 of the dissertation consists of a brief summary of my cross-case analysis experience, followed by a detailed presentation of each assertion. This synthesis consists of an explanation of each assertion, a summary of my rationale for arriving at the assertion, a discussion of supporting and contradictory evidence, and a statement of any new meanings of the quintain that emerged through the exploration of each assertion. Throughout this drafting process, I continued to critique my thought processes, and consider whether I needed to return to the quintain or case-level data to revive discarded assertions or create additional ones. Chapter 5 will close with a discussion of the insights provided into each research question by the assertions that emerged from the cross-case analysis. After the cross-case analysis work of chapter 5 was completed, I took a step back, and drafted several memos on each of the cross-case assertions and their possible implications to theory, research, and practice.

Discussion of cross-case findings. I then wrote another set of memos examining the cross-case assertions in the light of the ACRL Framework for Information Literacy, the theoretical framework through which I discussed the findings of this study. As discussed in Chapter 1, Stake (1995) argues persuasively for eschewing an *a priori* theoretical framework in a case study design when research questions are directed toward exploring and understanding a broader social sciences issue (p. 16-17). Instead of framing

the study within the parameters of an existing model, the ways that the issue influences and is influenced by the case should serve as the starting point for design and analysis.

As discussed in Chapter 2, the Association of College and Research Libraries adopted the Framework in early 2016. Designed to provide information literacy practitioners and researchers with a theoretical foundation for understanding information literacy, I realized that the Framework could serve as a particularly appropriate framework through which to examine my findings. To my knowledge, this discussion of my findings is one of the first attempts to use the ACRL Framework for Information Literacy for Higher Education as a theoretical framework for scholarly inquiry as well as instructional design. As discussed in more depth in chapter 2, this document has been evolving since 2013, alongside my work on this dissertation. As a practicing information literacy librarian, my dissertation work took place at the same time I was consuming numerous presentations, articles, essays, listserv conversations and tweets about the Framework and the debates surrounding it. I realized that by putting my findings in conversation with the six "threshold concepts" included in the Framework, I might be able to discover ways in which my participants gained mastery of threshold concepts via search mediation encounters. On the other side of the coin, assertions about search mediation described above might provide new perspectives on the Framework and the debate that surrounded its development and publication.

Because this study is the first to my knowledge to use the ACRL Framework as a theoretical framework, I could not fall back on previous practice to determine how I would put it in conversation with my findings. In addition, the ACRL designed the Framework to address a lack of a broader theoretical grounding for Information Literacy

Practice, as opposed to this study, which was focused more narrowly on exploring the topic of information search mediation. In addition, unlike the ACRL Framework's grounding in Meyer and Land's theory of Threshold Concepts, I approached my study from the perspective of Symbolic Interactionism. Because of these differences in intent and design, the six Threshold Concepts did not completely resonate with my six cross-case assertions. And yet, important aspects of both my findings and the ACRL framework emerged from putting them in conversation with each other, and I saw that the discussion would not be a simple matter of looking at my findings through the lens of the Framework. The findings illuminated important implications of the Framework, and vice versa. Because of the newness and controversy surrounding the development and content of the Framework, I did not think I could ignore what my findings seemed to say about the framework in my discussion.

After considering a few possible organizational structures, I decided to organize the discussion by my findings, briefly describing each one, discussing it in the light of relevant threshold concepts or the ACRL Framework in general and then examining what that particular finding supported or contradicted about the Framework. Revised versions of my memos became the heart of the discussion of the meaning of the findings and assertions, as well as the study's implications for the future of information literacy research and practice. I present this discussion in chapter 6, the final chapter of the dissertation.

Trustworthiness and Quality of Results

According to Lincoln and Guba (1986), a qualitative study is only useful to the extent that the findings, cross-case assertions and the researcher's analysis of them are

trustworthy. Trustworthiness allows a reader to rely on a researcher's findings as accurate, to understand if participants' experiences may be relevant to the setting in which they may work, and to replicate the same study in their own setting if they so desire. Several qualitative methodologists provide criteria for determining trustworthiness, including Lincoln and Guba, Stake (1995), and Patton (2001). Unlike Stake's tight focus on triangulation and Lincoln and Guba's design for naturalistic qualitative research, Patton uses a three-pronged approach to evaluate the methods involved in creating a credible study, important aspects of the researcher-as-instrument, and the philosophical context in which the research takes place. In this section of the chapter I will define each of Patton's three criteria of qualitative research credibility, and discuss the aspects of my study that make it a trustworthy exploration of information search mediation.

Rigorous methods of data collection and analysis

Patton (2001) states that the first criterion of a credible qualitative study is a set of rigorous methods for fieldwork and data analysis. In an attempt to understand information search mediation experiences from as many different angles as possible, I used a wide variety of data sources in order to triangulate both within and between cases, as recommended by Stake (2006). to a multiple case study; triangulation within a case and triangulation across all cases. To perform a within-case triangulation I used interviews, drawings, and observations to understand a participant's experiences from multiple angles. This seeming redundancy provided a firmer foundation on which I was able to make assertions and extrapolate findings from a participant's lived experiences of information search mediation. In the second, across-case triangulation, I considered the

cross-case assertions in the light of what is already known about information search mediation, both in the literature and in the experience of librarians and scholars who are particularly knowledgeable about information seeking and reference.

However, rigorous methods do not end with data collection. I used Stake's (2006) long-established methods for multiple case study analysis to identify each case's core findings, and to put those findings in conversation with each other. I also used trustworthiness practices suggested by Lincoln and Guba (1986) to get an external view on my data, including member checking, "thick description" (Erlandson et al., 1993), and most notably peer debriefing. During my data analysis phase, I took advantage of both formal conference presentations and more informal conversations with colleagues to determine whether they agreed that my emerging findings were truly grounded in the data. By combining tried and true methodologies with an outside perspective from other professionals within academic librarianship and higher education, I constructed a rigorous methodological framework for this study. However, according to Patton (2001) rigorous methods are only the first step of creating a credible research study.

Researcher Credibility

The researcher is the instrument of analysis in qualitative research. For that reason, my positionality, perspective, and qualifications are an important factor in establishing the trustworthiness of this study. Patton (2001) contends that a researcher should "report any personal and professional information that may have affected data collection, analysis, or interpretation" (p. 566). As discussed in greater detail in the reflexivity statement, I am an academic librarian with experience providing instruction and reference services to lower-division undergraduate students very similar to those

whose experiences I explored in this study. I also completed two previous research projects exploring the information seeking experiences of undergraduates, one of which was published in the *Journal of Information Literacy* in 2014.

In addition, the researcher herself can affect the data and findings of her study simply through her presence in the field. I was very concerned about this issue, Students' different mediation choices with librarians versus other possible mediators inspired this study. I thought deeply about how I would conduct myself in the fieldwork. As much as possible, I wanted students to think of me as a student who happened to be a librarian, rather than the reverse. I dressed casually during observations and interviews, wearing jeans and tee shirts that made me fit in with the students. I held all interviews in campus study lounges and other spaces at UCC that students were familiar with and used regularly. With one exception when an instructor asked me to answer a student's question about citation formatting, I did not offer any reference assistance. I continued to pay attention to my effects as an investigator as I transitioned into data analysis. In addition to the aspects of the research design describe above, I also kept a researcher journal throughout data collection and analysis. Every day I worked on the study, I logged my successes, mistakes, breakthroughs, unanswered questions, and second-guessing about preliminary findings. I added to the journal and referred to it over and over through the analysis. I used this journal as yet another tool to ensure that the findings of my study remained grounded in the lived experiences of information searches that were the cases in this study.

Philosophical Belief in the Value of Qualitative Inquiry

Patton (2001) notes that qualitative research, although becoming more common, still does not enjoy the same respectability as quantitative methods. Therefore, it is important to provide a cogent argument about how qualitative research methods follow logically from the research questions a researcher is exploring. Such a carefully constructed rationale is not only important in creating rigorous methods, but also in explaining to readers the value of qualitative inquiry as a means to better understand a topic of interest. I started from first principles, by defining the research problem, purpose, and questions. I then turned to matters of theory, selecting and describing an epistemological stance and theoretical perspective that were well matched to the questions asked in the study, and upon which I could construct an appropriate research design. By showing all the steps of my design rationale for this study, I attempted to provide a chain of logic that would be clear to all readers, whether or not they were already familiar with qualitative research methods.

Summary of the Methodology

The previous chapter provided a description of the methods for a qualitative multiple case study exploring students' experiences of information search mediation encounters in the context of a course-related information search. For the purpose of this study, a case is defined as a student's information search from initiation to conclusion. The design flowed from the problem, purpose, and research questions of the study, as well as my personal epistemological worldview of pragmatic constructionism. The research was conducted with current Composition II students at a public community college system. After providing a reflexivity statement on my positionality as researcher-

as-instrument, I discussed the informed consent process, interview and observation protocols, and the anticipated methods of data analysis. The chapter concluded with an overview of the steps taken to conduct an ethical study with trustworthy findings that may be useful to both researchers and practitioners.

CHAPTER IV

FINDINGS, PART 1: CASE-LEVEL ANALYSIS

The purpose of this study was to explore lower-division undergraduate students' thoughts, feelings, and actions as they engaged in and reflected on their information search mediation encounters over the course of a course-related information search process. My study was guided by two central questions:

1. What are the characteristics of information search mediation encounters as experienced by lower-division undergraduate students?
2. How do students use search mediation encounters to navigate the information search process?

To explore these questions, I employed a multiple case study methodology as described by Stake (2006). Eight students participated in the study. Each student's information search process was considered a case for the purposes of this study. Stake describes a two-step process of analyzing individual cases in isolation for key findings, before considering them as a set to identify cross-case assertions that describe the "quintain", or essence of the topic under investigation. This chapter presents the first, or case-level, analysis of this multiple case study of Composition II students' lived experiences of information search mediation during an information search process.

During a three-week process of gathering contextual data including classroom and campus observations of the three class sections included in this study, I recruited eight students to take part in participant interviews about their information-seeking experiences. The data for each student (or case) included interview transcripts, participant drawings, course syllabi, finished papers, work notes, and other student-generated documents or artifacts. As previously noted in chapter 3, I used numerous techniques to bolster the trustworthiness of my data, intra-case findings, and cross-case assertions.

This chapter opens with a brief introduction to the locations, instructors, assignments, key mediators, and participants in this study. Following this contextual information, the rest of the chapter consists of eight case reports, as well as descriptions of key incidents from classroom observations, that are relevant to participants' experiences. Because of context-related differences in assignments and experiences in the Composition II sections from which participants were recruited, the case reports and observations are organized by class section.

Introduction to Contexts and Participants

Although each student will be introduced more fully in their case report, this section serves as a brief introduction to each student included in the case study. I also provide a reference chart [Table 1, p. 92] listing students' class sections and basic information that the reader may find useful. I used a fill-in-the-blank form to gather demographic information, and used each student's own words verbatim to describe the participant's ethnicity and gender.

Central Campus (Section A-1)

A little less than an hour before my first observation of Mrs. A's Composition II class (Section A-1), I walked into the Central campus of Urban Community College for the first time as a researcher. The ground floor of the six-story building, located in Downtown Riverbend looked as though it had been recently renovated. My eyes took a moment to adjust to the dimly lit interior, and I turned left to traverse an open space with dark-yet-warm floor coverings, light wood desks and standing height counters for various campus services. The effect was comforting and welcoming, as I strolled past and exchanged nods with campus staff working at the service desks.

I rode up to the elevator to the floor where "Mrs. A" taught and held office hours, and was immediately taken aback by the smell of disinfectant that, when combined by the slightly shabbier décor and industrial linoleum floors, made me feel as though I was in a hospital, not a college campus. A quick glance at the office across from the elevators cleared up my confusion, as I realized the nursing school had their phlebotomy classroom on this floor as well. I walked down the hallways, noting the reading lab, math tutoring lab, and classrooms. The walls were mostly beige, with a few blue and dark grey accent walls to break up the monotony. Every twenty feet or so, a piece of student art hung on the walls. I turned into another hallway, and found one side of the hall completely taken up with a long row of sliding glass doors, identical to what one might see in a suburban house. However, instead of leading to a backyard, each one enclosed a small faculty office. Most instructors used blinds to block most of the door from passersby, and each door was covered by official notices, art prints, and cartoons. I soon found Mrs. A's office, and knocked tentatively on the door frame.

Mrs. A and Section A-1 research assignment. Mrs. A smiled, and waved me in. A tall, slender woman with blonde hair and an open smile, she had a casual dress and manner that instantly made me feel at home. Mrs. A's office was small, but even through her vertical blinds I could see it was decorated somewhat more elaborately than those of her neighbors. As I sat down, I noticed that the walls were covered with black and white posters of scenes from classic Hollywood films, and a floor lamp provided a warm light to the room in lieu of the florescent lights that were turned off. She mentioned that today's class section had shrunk somewhat in recent weeks as the final drop date approached, but was still hopeful that her class and their unique research assignment would help me with my project. There were 15 students still enrolled in the class. However, because of the popularity of that particular campus, day, and time with high school concurrent students, only ten students were old enough to qualify for participation. I learned that each student would be asked to write a 6-8 page research paper on a true crime that had taken place in the last 70 years. Students would be expected to present basic information about the crime and to critique the role of the media in covering and depicting the events and their aftermath.

Section A-1 case study participants. Two students from this section of 15 volunteered as interview participants for this study. "Kaliq" is a 33-year-old father of two who reported a mixed Syrian-American and Irish-American heritage, and is going to school full time while also working full time. His long-term goal is to complete his pre-requisites at UCC, transfer to the nearby Land Grant State-Riverbend (a pseudonym), and graduate with an MBA in international business. "Ana" is an 18-year-old Hispanic woman, also both working and attending UCC full time while living at home. Her goal is

to transfer to Flyover Flagship University (a pseudonym) on the other side of the state, enroll in the pre-dental program and eventually earn her DDS.

Tisdale Campus (Sections B-1 and B-2)

UCC's Tisdale Campus was located in an ethnically diverse working-class area of Riverbend about five miles from the Central campus. About 30 minutes before class time, I parked at the newer of the two main buildings at the Tisdale Campus, a round steel and glass structure that appears to have been built in the last 10 years or less. I dashed from my car through the pouring rain to a covered entryway and entered the building, shaking the water from my hair. Mrs. B was not in her office, so I took a few minutes to circle the space and get my bearings. Approximately two-thirds of the space is devoted to classrooms and offices, with a large pie slice devoted to a commons area ("The Forum") with floor-to-ceiling windows, study spaces, a computer lab, and both math and writing tutors.

Mrs. B and Section B-1 & B-2 research assignments. I returned to the faculty office hallway to find Mrs. B at her desk. Mrs. B responded to my email solicitation for classroom access and invited me into two sections of her Composition II classes. Mrs. B was about 5' 7", with short, wavy red hair, wearing slacks and a white turtleneck topped with an aqua jacket. She wore a large gold brooch on one lapel. I sat on the red and gold floral sofa half-covered with papers and other items, and discussed the plan of attack for the day. She had a warm but firm demeanor that seemed to provide a calming atmosphere, different but likely no less effective in creating a productive classroom space than Mrs. A's youthful eagerness. Later in my observations I learned that Mrs. B had an

undergraduate degree in Library Science and did most of her own information literacy instruction, but shifted gears to English for her master's work.

The first class of the day, which will be referred to as section B-1, is the only Honors section included in this study, with 10 students enrolled and 8 in attendance today. One student was concurrently enrolled and under 18, and therefore ineligible for this study. The theme of the semester for Section B-1 was detective novels, and each student would be giving a presentation summarizing their next assignment, a research-driven report on a mystery author or authors and their works. The 22 students in her standard section (B-2) were creating online annotated bibliographies, or "webliographies", of books, articles, and reliable websites related to their career goals.

Section B-1 case study participants. Two students from this section of 10 volunteered for this study. "Frank" is a 49-year-old African American, studying business management but ultimately planning to pursue a career in substance abuse counseling. "Danielle" is a white, 36-year-old woman nearing the completion of her Associate's degree in horticulture, with a plan to eventually own and operate her own cut flower farm. She has worked in the horticulture industry for many years, and currently works 20 hours a week at a small flower farm.

Section B-2 case study participants. With 22 students, this section was almost the size of the other two combined, and four students from the class volunteered to participate in interviews for this study. At 51, "Gary" was the oldest participant in this study by two years, attempting college for the first time after supporting his wife through a graduate program. This white male hoped to move into the human services after a career in manufacturing had left him with creaking joints and a goal to give back to the

next generation. "Becky" is a 32-year-old White and Chickasaw Indian female planning to become a teacher. I was struck by her enthusiastic in-class presentation of her research assignment, and the fact that I witnessed her assisting a fellow student with information seeking while observing the class.

Eric, a 22-year-old white male, was about halfway through the coursework needed to complete his degree at the UCC Tisdale campus. Although he planned to transfer to the local campus of Flagship State University upon completion of his associate's degree and had expressed an interest in music production, he still had not decided on a major. The final participant from section B-2 was Hunter, a lanky and artistic 19-year-old White/Native American aspiring psychologist.

Summary of Contexts and Participants

As a reference for the reader, two tables with summarizing information are provided below. Table 1 consists of a list of participants in case report order including their class section, key demographic information, and stated goals.

Name	Section	Gender	Age	Ethnicity	Current goal
Kaliq	A-1	Male	33	"Libyan, Irish"	Earn an MBA in International Business
Ana	A-1	Female	18	"Hispanic"	Transfer into a pre-dentistry program
Frank	B-1	Male	49	"African American"	Become a Substance Abuse Counselor
Danielle	B-1	Female	36	"White"	Own & operate a cut flower farm
Gary	B-2	Male	51	"White"	Work at Local Boys' Home
Becky	B-2	Female	32	"White/Chickasaw Indian"	Transfer into an Education B.S.
Eric	B-2	Male	22	"White"	Transfer to bachelor's program and become a record producer
Hunter	B-2	Male	19	"Caucasian/Native American"	Move to Japan, become a Psychiatrist

Table 1: Participants in Case Report Order

Table 2 is a quick reference for each of the three class sections from which participants were recruited, including campus location, instructor pseudonyms, number of students in the class and a brief description of the class and research assignment.

Section	Campus	# of Students	Instructor	Assignment
A-1	Central	15	Mrs. A	Research paper & presentation on a true crime of the student's choice
B-1 (honors)	Tisdale	10	Mrs. B	Research paper & presentation on a topic related to a Mystery novel, series, author, or subgenre.
B-2	Tisdale	22	Mrs. B	"Webliography" (online annotated bibliography) of sources related to student's career goal or other topic

Table 2: Class section descriptions

Case Reports

With all this contextual information in mind, I entered the field. During my three weeks of observations I met eight students who shared their experiences of seeking information and consulting search mediators in one-on-one interviews. After orienting the reader to each of the three very different Composition II class sections with a vignette adapted from my field notes, I presented the case reports from the students in that class. All but two of the case reports include that student's drawing exercise. Kaliq's drawing is not presented as part of his case report but instead is presented in chapter 5, because of its significance to one of the cross-case assertions. Danielle's drawing of her home office was not particularly relevant to the themes of this study and is not presented.

Observing Class A-1 (Central Campus): Peer reviewing rough drafts

Mrs. A described the plan of attack for the peer review session. For this in-class activity, each student would read and evaluate their partner's draft paper, paying particular attention to the use of sources, construction of arguments, and the general flow

of the paper. As the peer review started, most students turned to their tablemates, exchanged papers, and started quietly reading.

Student 5 moved over to the left row to work with Student 9 (“Ana”). Student 2 (“Kaliq”) raised his hand and asked Mrs. A for instructions on citing a source discussed in another source. Mrs. A suggested that he cite the source that he actually wanted to discuss, if he had access to it. Kaliq had found that newspaper article, but was unsure how to format the citation. Mrs. A asked me if I could help. I had decided before entering the field that it would be less awkward to assist a student if asked than to decline due to my “observer” role. I briefly described to him how I would handle citing the source.

By this point, the room had become quiet as the students read and annotated their partners’ work. Mrs. A sat down next to me, saying “I always feel useless during this part.” Eventually students begin discussing their work. Kaliq and Student 6 were having a very animated conversation. Student 6 was sharing some particularly gory details about the autopsy reports she’d read on her case, and was proposing her theory of “Whodunit”.

Continuing my circuit, I encountered student 5 and Ana, who were discussing the former student’s lack of citations. Student 5 said, “I never put sources in my drafts. I lay out the format of my paper, then put them in later.” He also complained about his struggle to find balanced media coverage. Mrs. A then gave students a 5 minute warning to wrap up. At this point I had returned to my seat, and Kaliq and Student 6 were still talking. Student 6 appeared to have caught a few typos, and Kaliq was grateful, saying “Editing is not my forte.” Student 6 then pointed out a few spots in Kaliq’s paper where he could make his arguments clearer. At this point Mrs. A called the class to order.

Kaliq's Information Search: "I am a Research Badass."

It had taken a couple of attempts to make this interview work with Kaliq's busy schedule, but the wait was worth it. Kaliq sat in front of me in jeans, t-shirt and shaved head, his features and relatively fair complexion reflecting the Irish-American half of his heritage more plainly than the Libyan half of his background indicated in his name. At first glance he looked younger than his 33 years. However, the stories he told of his information-seeking experiences indicated ingenuity, determination, and maturity. Kaliq's experiences revolved around three key issues: a strong drive to write something "original," balancing a thorough information search with his very real time constraints, and the quest for a high grade.

Although most students in the class picked recent tabloid crimes or local incidents where resources would be easy to come by, Kaliq opted for a nearly 60-year-old murder case set in a distant state. Most students would have quickly given up and switched gears. However, Kaliq not only survived his topic choice, he completed an excellent research project, becoming a self-described "research badass" along the way. I wondered how on earth a novice information seeker had gotten access to the decades-old newspaper articles and other primary sources that he used.

Finding 1: The Importance of Originality. Different students have different goals for their information searches, and by extension for their mediation. Kaliq wanted to write an original paper that added new ideas about a topic that hadn't been done many times over. Unfortunately, Kaliq realized very early in his search that he was "in over [his] head". Fortunately, Kaliq started by getting extra help at the campus library.

“[The librarian] came to our class and talked to us...and I was here a lot, so it made sense to stop in...He just kind of pointed me in the right direction...how to use [UCC's newspaper] databases and key words and stuff...and then weeding out [the results]. ...He explained to me that they don't have as many [resources] as he would like as far as files in their databases because of, you know, funding. But I ended up being able to do plenty of research without any of them. ...Everything that was in their database was pretty new.”

Kaliq was able to combine a few applicable library resources with front page scans from relevant newspapers found in Google’s newspaper archives. However, Kaliq felt he needed more information to come up with an original twist on the topic, something he repeatedly mentioned as a necessary element of a good paper.

Kaliq soon found several books discussing his topic, all of which contained reference lists of newspaper articles from the period. Kaliq told me that he wanted to use as many of these newspaper articles as possible in his paper because of the importance of primary sources to the assignment. However, Kaliq quickly became frustrated in his efforts, "because the newspapers were either stuff that never got archived online because it's too old, or it's in individual private archives and I had to pay for stuff. So it was hard to get access".

Finding 2: Balancing Quality and Time. Undaunted after hitting roadblocks with the library and Google, Kaliq thought that journalists might have access to resources that he couldn’t get through either the internet or the UCC library databases. He called two nearby journalism schools to talk to some professors. In both cases he was connected to a friendly member of faculty. Both professors agreed that he had pretty much

exhausted the possibilities of online information seeking. Instead, each suggested that he contact the newspaper in the city where the crime took place, and attempt to get copies of the relevant articles from the newspaper archives.

Kaliq appreciated that advice and thought it was excellent, but ended up not taking it, instead making do with the articles he already had, combined with books on his topic. He concluded, "I ended up kind of balancing time with the value of having those articles in my paper...I sort of just weighed it against, can I write an effective paper without having those articles in my hand? ...But that was good advice."

Finding 3: Completing an "exemplary" information search. Kaliq provided me with a copy of a "reflection" assignment he completed on his information seeking and writing process for the research paper. His drive to excel permeated every paragraph of his reflection, which itself was a fervent argument for why his paper deserved an A. Kaliq discussed the requirements for an "exemplary" research paper, one of which was the requirement to "conduct thorough research". Kaliq notes that his topic's age meant that it "inherently require[d] more digging" to identify and access needed sources. Writing about his work in the third person, he describes his information search process as "the product of long, caffeine-driven nights, adorned with sloppy shorthand notes and hand drawn maps, reminding him of possible avenues of discovery." For Kaliq, both the quality of sources found and his "seriously agonizing" and time-intensive information-seeking process were indications that he had completed an exemplary research paper.

However, Kaliq contends in his reflection that the writer of an exemplary research paper must do more than organize and summarize information found in other sources. A writer must use the facts of the subject as a foundation on which to build his own

opinions and conclusions. Throughout his reflection, he describes how he struck a balance between these two forces throughout his information-seeking and writing processes. This interweaving of his own ideas and the information he found echoes the entwined nature of the threads of time, grades, and the desire to write something original as well as exemplary.

Ana's Information Search: "You're going to help me with this."

Ana, wearing jeans and a t-shirt from the university where she hoped to transfer, sat in front of me with the determined air of a young woman with a strategy. Ana was taking advantage of the free tuition offered by UCC to all local high school graduates with a minimum GPA to knock out her core requirements on the cheap before transferring. With 17 hours already under her belt from her first semester, Ana was wrapping up her first year of college in Mrs. A's Composition II class. She mentioned that had learned far more about mass murderers and true crime than she ever expected, and found the course theme of true crime very engaging. Although Ana worked a full-time job in addition to her full load at UCC, she seemed enthusiastic about taking some time out of the last weeks of her semester to share her experiences with me.

Finding 1: "Yeah, Google—you're my best friend." Ana seemed very impressed with the offerings at her campus's library, both in terms of the collection and the support from librarians. Ana described her first in-class library instruction session in glowing terms, saying that the librarian showed off resource guides, database searching tips, and even a video featuring a memorable library mascot using various resources and services. However, when asked what resources she used in seeking information for her assignment on the "BTK" murders, she glanced around the empty Central Campus study

lounge, dropped her voice to little more than a mumble, and confessed, "Honestly, Google. I should've used the library research tool. I should have, but [whispers] I didn't. I did not. It was all Google."

Curious about both her response itself and the appearance of guilt in her voice and body language, I asked her more about why she opted for Google for most of her information seeking. "I did [use the library], just not for this [paper]. ...I really don't know why I didn't use it; I just shot over because Google's like the main one. I'm like, 'Yeah, Google, you're my best friend'." When Ana completed her drawing exercise (see Figure 2), I noted that she had inserted Google at the center of her picture, between the various people she had asked for advice or to proofread her assignment. She responded that it had seemed appropriate, since Google had been the main resource she consulted in her information seeking.

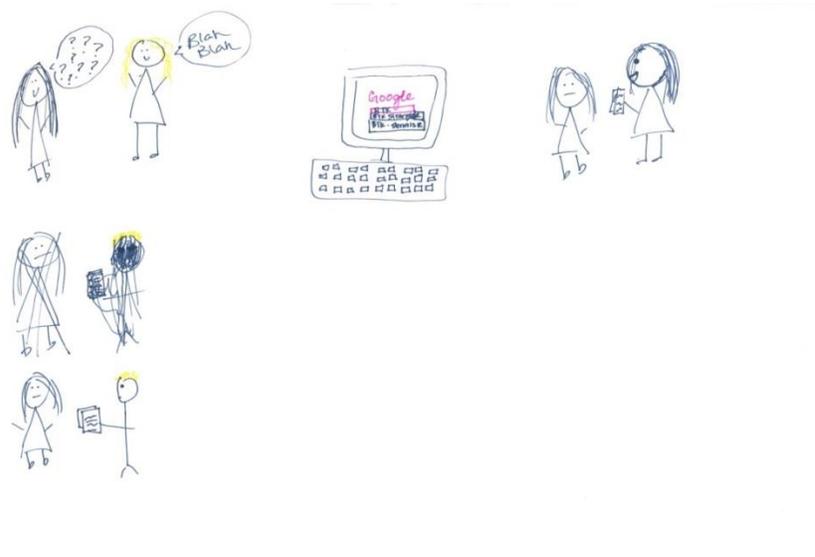


Figure 2: Ana's drawing

Finding 2: "I need a good grade on this." Ana, like her classmate Kaliq, was very motivated to perform well at UCC in order to transfer to her dream institution to

finish her undergraduate and graduate programs. She also felt a great deal of anxiety about whether her writing was good enough to succeed at the college level. For that reason, she turned to several friends for assistance in identifying typos, finding sources and ensuring her paper flowed logically. She said her selection of mediators had more to do with convenience than perceived expertise, because she mostly just wanted another pair of eyes evaluating her work. Ana remarked,

The other people that I had read it, they said it sounded fine, but I think they were saying that because they didn't have the prompt, they didn't have the rules that she'd sent for us to use in writing this paper. But it did make me feel like, "Okay, my paper's not terrible. I'm not going to fail this."...It was reassuring.

Ana mostly asked her professor and two friends for assistance with the BTK paper. Ana had never written a paper that required a refutation section, and asked Mrs. A for some advice on finding sources that disagreed with the argument she was trying to make. One friend was studying with her at the library, working on her own paper, and they began collaborating to help each other find sources. "She read my rough draft, and so she researched [The BTK Killer]. She found a site that I hadn't even looked at which showed some very gruesome photos which I actually incorporated some into my PowerPoint." Finally, Ana asked her boyfriend for his thoughts.

I found this-- it was a really good sentence in The Wichita Eagle. It was an article, and I was thinking, "Man, maybe this would sound like a better introduction than what I have already." And so I was like, "Do you think this would sound better, or this would sound better?" And he said it sounded fine the way that I had it written.

By that point, I was getting frustrated. I just wanted to be done with this, so I was like, "Okay, that's good enough."

All in all, Ana said she found asking her friends for help with seeking and synthesizing information both intellectually and emotionally useful. "It helps to reassure, yeah, whether my paper was good or not. . . .and to see what someone else thought about them, my case, besides just what I was thinking - different perspectives, yeah."

Observing Class B-1 (Tisdale Campus): an impromptu Q&A

I sat in the back of the classroom, about 30 minutes into my first observation of Section B-1, listening to students present summaries of their research papers on a mystery genre, author, or book. At the end of student presentations, Mrs. B suddenly turned to me, mentioned that we had some time left before the solo work period because a few students hadn't been ready to present. She then asked if I had any questions I wanted to ask the class as a whole about their information seeking. This was nothing that we had planned or discussed ahead of time, but I wasn't about to let an opportunity like that slip by. I started our 15 minute free-form class discussion by asking:

Me: What projects have you worked on this semester that required you to look for information?

Student 2 ("Frank"): Everything! (laughter from students)

Me: What are the ones that have been a really big pain?

Student 1: There was an assignment where we had to use two outside sources for information, but in theory we could do it very easily without those outside sources, so it was difficult to figure out what information to use and how to work with it.

Me: What did you do to get started when you needed to find those outside sources?

Frank: Well, if we're going by [Mrs. B's] requirements, then that would require going to the UCC database. I'm opposed to the databases, because I find them redundant, and very unhelpful. They haven't helped me in anything. ... Even when you condense your search down, I mean, it's not helpful. You know, even doing the one on therapeutic gardening. I narrow down the search pretty concisely and it gives me material that's, it's a lot of material I gotta weed though, and I maybe, maybe glean out a paragraph, and then I've got to try to build on that paragraph. But, it's just there's so many different searches and so many different ways to get information. But, like, [Mrs. B] and even [another professor], he's not like diametrically opposed to online sources, but for him as well as Mrs. B, they just want, you know, scholarly sources. And maybe not going to PhD level but even going into a Bachelors', you're going to have to use those sources. You can't just go with the stuff that's on the open web.

At this point, Ms. B cut in, asking why students should pick library resources over the open web. A chorus of voices responded "It's verified", and "it's reliable". She responded, "Right".

Frank: Yeah, yeah, and you can find a lot of bibliographies, in the PDFs, to just expand the search you know.

Ms. B: I don't limit them to databases. I want them to use the open web too, because I know they're going to use them in real life and I want them to be able to

evaluate them. So we spend time early in the semester learning how to evaluate them.

Me: When you run into trouble, what do you tend to do? Is there someone you ask for help?

Frank: Yeah, I just ask Mrs. B! (Laughter from group) For example, I've got a fact sheet [for another class], and so I say "Professor, I've got a fact sheet that I need to do, can you help?" And she said, "I've never done a fact sheet!" And I went to a librarian here, and I was going to ask you in fact (points at me). I mean, it was crazy, like no one knew about fact sheets.

...

Ms. B: I'm not faulting him, but an example would have been nice.

Frank: Exactly. Even in the class there were several students that were up in the air? They were like do you want it like this, or this, or was it two columns or a brochure, and that was like, to me I was like "OK, I wish it was just like comp", you know, I could put it in MLA format I could pump this out, you know, and be done with it. But with him it was, it was challenging. And it still remains to be a challenge.

...

Me: You ("Danielle") mentioned during your presentation earlier that there was someone outside that you asked for help finding stuff?

Danielle: Yeah, "Kevin", He's in the "Forum", in the computer lab, he's a computer guy--

Frank: Computer guru! (class laughs)

Danielle: Yes, and there are tutors there as well. They're free, and they're in the morning and the evening. They're there any time and they can help you with your papers, help you with research, and anything.

Ms. B: The tutors used to be in separate offices, and when this building opened, they were all combined for convenience. I think students like it; it's easy to find the tutor that you need.

Frank: I've been to all the other campuses except "Suburban", and I think this is definitely the best Forum. I don't like "Creekville". The only good thing about Creekville is their power points, they have color printers. Central's, Central's are divided up so you have to go to different parts of the campus [to get help]. But even there, I went to their writing lab and asked how to find something, and she got on her phone (to start searching) and I was like. "I could have done that!" I've got a smartphone; you know what I'm saying?

Frank's Information Search: "It takes people helping people."

As may be apparent from the observation vignette, Frank is a gregarious and insightful student. Although he started UCC in middle age, his large and tight-knit extended family values education greatly. Frank's communal approach to the information-seeking process, and academic life in general, gave him a unique take on the subject of this study. Like the other participants of the study from the Tisdale campus, we met at the Forum on a quiet weekday afternoon. The study lounge was so silent I could hear the jazz music emanating softly from the headphones hanging around his neck as he shared his personal theories about success in both information seeking and college in general.

Finding 1: Information is "Boundless". Whether searching the library databases or Amazon.com book summaries, Frank was willing and able to search far and wide to find as much information as possible. He even enjoyed the inevitable dead ends and side tracks of the information search process, considering anything he learned a useful piece in his ultimate goal of becoming "educated". When I asked Frank what he had learned about information seeking over the course of the semester, he responded,

It's just boundless. It's boundless. I'm like, you know, "Today, no one has a reason to be ignorant," even if it's just seemingly useless information...even if it's just an interesting factoid or whatever it is. ...But it's not [useless information], because it could be useful one day. That's the thing about it.

However, Frank was quick to note that the "boundless" nature of information seeking, as he experienced it, also had a "dark side". Fortunately a friend at the library, Frank's history instructor, and even Mrs. B helped him learn some search strategies to navigate the information landscape without being overwhelmed. In addition, Frank, who formerly prided himself on being a free-form, intuitive writer in his assignments and his personal blog on success, had embraced the power of outlining to keep his search process manageable. As he put it, "Because at the same time, where it is boundless, it's so much out there that you have to narrow it down." This tension was born out in Frank's drawing (see Figure 3), with arrows of information flying back and forth via the computer, insights arriving in the middle of the night, and a student handing an assignment to an instructor who, according to Frank, was unsure of and possibly puzzled about what he had just received.

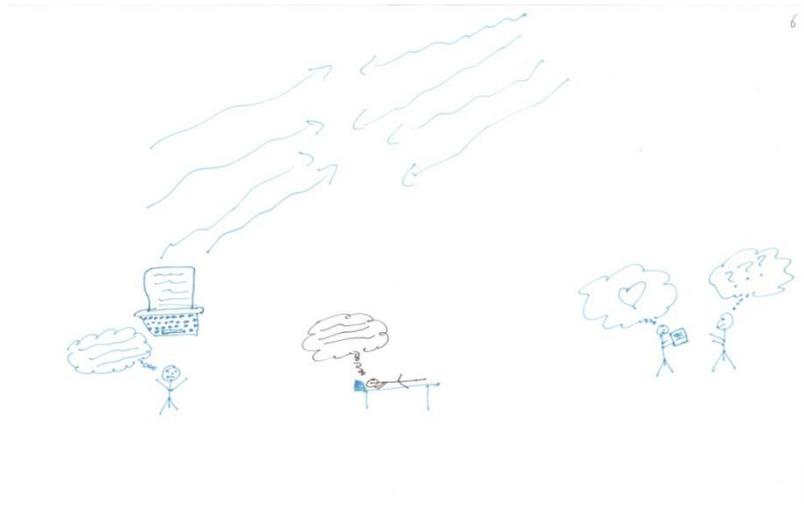


Figure 3: Frank's drawing

Reading *Antigone* at the family reunion. As Frank talked, I soon realized it would be impossible to understand his journey as a solitary one, even by the standards of a study exploring the social aspects of the information search process. Frank described to me a world filled with family and friends, mentors and protégés, and a free-flowing exchange of information and guidance that permeated and powered his entire social web. Frank stated he regularly asked for help from professors, librarians, and tutors, but most of all from educated friends and family.

I don't know how some people can go through their education career and not receive help from their peers. ... Your peers, you can text, you can call, you can go sit down somewhere in Starbucks, kind of brainstorm. You can do all these different other things and it brings more of a sense of community. ... That's what I'm big on, and this is just how I was raised and my family."

Frank continued, saying,

[Peers] are my sources sometimes, even more so or in addition to, you know, search engines, databases, and whatnot. ... Research is about not only finding your

information, not only finding your sources, not only finding people who hold the same view or maybe even a counter view. ... They're not the final authority or The Authority, but yet they're going to be honest.

Frank shared several examples of giving and receiving information search help with classmates and friends who were ahead of him at UCC or had completed their degrees. However, the most notable example of all took place at a family reunion a few semesters before our meeting, when he was taking a humanities course and struggling to write his first college paper ever, on *Antigone*.

You want to talk about sources. Who was my source on that one? YouTube. I watched the play. ... You know what? I loved that book. I love it. It was really-- it was good. So I'm on family vacation, watching *Antigone* on YouTube. It was crazy. ... I'm asking people, "What do you know about *Antigone*?" "*Who?!?!?*" [laughter] Oh, my God. It was crazy. ... And my niece who got her--she got her doctor's from Ole Miss. She was up there, and I'm like, "Surely, she would know." She has a doctorate! So I'm like, "You had to write a dissertation. Come on, man. Help me. Give me a bone here." ... She said, "You're a writer. You can do this. You can do this." And I ended up making an A on the paper.

Danielle's Information Search: "It's just a matter of expanding your mind."

Unlike most of the students I interviewed, Danielle had completed 49 credit hours, and hoped to graduate next semester, assuming she could get all the courses she needed to finish. Possibly because of that experience, Danielle struck a noticeably reflective tone in our conversation, often commenting on how the things she learned fit in the larger scheme of her college experiences.

Finding 1: Mediation as a shortcut to identifying “real” sources. Danielle was very concerned about finding reliable sources for her work, and returned to this topic throughout our conversation. Early on, she stated that she almost always started her research work at the library website, and other sources recommended by her instructor, Mrs. B.

UCC has a website that you can go into off of Blackboard... it's through the library, it's like their [Google] Scholar. It's all just articles and papers that have been examined and are not--they're real. ...Then just in Comp I, Professor B kind of taught us how to go through websites and tell whether or not they were true, or if they were just trying to get money and things like that.

Ms. B, who was an English instructor but who also has a degree in librarianship, came up often as a search mediator when I talked to her students from class sections B-1 and B-2. I asked Danielle to share a bit more detail on what Ms. B had taught her and how it helped in her information seeking.

She helps you figure out which sources are reliable and then you just kind of go from there. ... She gave us a list of sources and so we went to them and you can tell which ones weren't [reliable]. But you really just had to decipher and go through them... And definitely, if they have a lot of ads and request money - things like that - they're probably not that reliable.

Later in the interview, Danielle mentioned that she regularly looked up non-academic information on the web for her “computer-illiterate” husband.

He needed to know how to change out the igniter in our oven. And so I Googled that, found the part. ...Finally found [a parts website] that I thought was

reputable, ordered the part, he got it in. I pulled up YouTube tutorials... To see other people doing things that--well, tutorials, like anything, make-up tutorials, I love it. ...A tutorial is a real person giving a real demonstration about a product or something that they've done in life... It's real commercials, not like TV."

Finding 2: Information seeking requires flexibility. Danielle seemed to consider flexibility an integral skill for surviving the information search process, both when seeking information and when integrating it into a final project. When describing her approach to searching a database, she commented,

If you're just thinking, "I need to find out more about Agatha Christie's *The Murder of Roger Ackroyd*." But if you type in -- if you put it in different verbiage, maybe don't put in the title -- and type in the years that she wrote, you might get other people who wrote entire books about her or might get other information that you didn't know existed. You just have to kind of play around with everything.

More intriguingly, Danielle understood that while the planned topic of an assignment was the starting point of a search, she often changed her plans in response to the information she uncovered in a search.

You can change your thesis to match your story [chuckles]. You don't have to keep to the same thesis...if your story changes midway through, you can change thesis and topic sentences, you're not stuck. ... I was always like, "Okay, this is what I need to find out. ...those are the only things I can read." But that's not true. It's just a matter of expanding your mind.

Finding 3: Information mediator or information source? Danielle's main research assignment for her Composition II class was to present viewpoints on the merits

of reading detective novels. However, two days before the deadline, she still couldn't find very many sources. At this point, Danielle decided to use an unorthodox source—friends and family who liked to read mystery novels. She sent loved ones a brief questionnaire, and they returned it with their responses, which she incorporated into her presentation. I was intrigued that Danielle was approaching friends not as information mediators but as information sources, and asked how her friends influenced her information search and the assignment she created.

After mentioning how she would have changed her approach if she had had more time, Danielle commented,

I should have asked a certain set of questions, and then come back with another set of questions. Instead of sticking to the same set per person, because each person was different in their answers. And same with my friend ("Amy"), she surprised me when she told me that science fiction was really what her interest was. I mean that just was shocking to me.

Danielle's friends, serving as both sources and mediators, surprised and challenged her assumptions in various ways. Having embraced flexibility as a key part of her process as a student and information seeker, Danielle was able to listen to what they said and go where the information led her, even though she might have made different decisions if given more time. Finally, Danielle said she used her encounters with mediators to learn the best and most "true" sources relating to the topic at hand, and listened to what they had to say as she created an innovative and engaging presentation for her class research project.

Observing class B-2 (Tisdale Campus): A classroom presentation

Much like the presentations in Section B-1, the students in Section B-2 each had to present summaries of the information they had found for their Webliography (online annotated bibliography) assignments. Student 1 was a woman appearing to be in her mid-30s, whose straight, honey brown hair touched the shoulders of her navy tee. She had a particular interest in researching gallstones, due to having her gallbladder removed a few years before. She dedicated her presentation to Mrs. B saying, "She didn't make us do a 10-page research paper, she made it easier." I watched this presentation particularly intently, as I thought the presentation and discussion might have particular relevance for my topic. She used a variety of resources, including websites such as the Mayo Clinic and WebMD, a few articles from Academic Search Premier, and an "excellent eBook" on chronic diseases. She then asked if anyone in the classroom had personal experience with gallstones, and a soft-spoken blonde who appeared to be no more than 18 or 19 (Student 3) raised her hand. The student presenter proceeded to ask Student 3 various questions, including what type of gallstone she had (Cholesterol stones vs. Pigment stones). As her presentation drew to a close with some tips on gallstone symptoms, the Q&A session evolved into an interesting information-sharing session between the presenter, Student 3, and several other students who had a family history with gallstones, or who had questions about nursing. Student 1 described a variety of treatment options for gallstones, and concluded her presentation to general applause.

Gary's Information Search: Don't "put the house before the logs."

Gary, who had to take several semesters of remedial courses before starting credit work, described himself as initially unprepared for college. He struggled a great deal in

his first semesters at UCC, but 40 hours into his associate's degree, he was starting to gain little confidence in his academic abilities. His slight anxiety that had dissipated during the interview seemed to return during the drawing exercise. Rather than reveling in the artistic experience like some of his classmates, Gary quickly and anxiously drew a series of word bubbles, connected them with lines, and handed the sheet of paper back to me (see Figure 4).

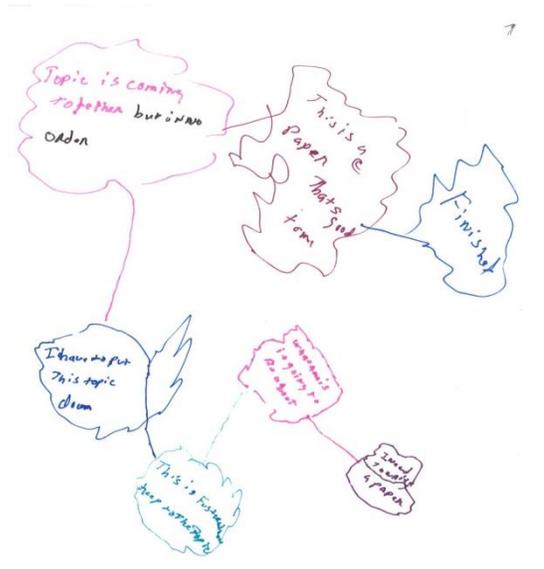


Figure 4: Gary's drawing

Finding 1: "What word do I need to ask the stupid computer?" I was a little dismayed that Gary misunderstood the verbal and written directions to the drawing exercise, and that he opted not to take another crack at it when I invited him to do so. However, in some sense his drawing was perfectly appropriate. Words, and his struggle to find the right ones with which to search for information and construct his ideas, were central to Gary's information-seeking experience.

Gary initially struggled to figure out how to even frame his search queries in the library databases he used for his webliography assignment. Gary first turned to a librarian

at the campus library who "gave [him] some good words" to try, and then to his wife, whom he asked for help regularly in part because of her advanced degree. "I said, 'Here, what word do I need to ask the stupid computer?'...And then she'll say, 'Well, [computers are] as smart as the person that's—[using them]'. 'I didn't need that, honey. [Laughter]". However, as he wrestled with his webliography assignment exploring careers in substance abuse counseling, Gary started making more sense of his topic through the information he found, and in turn, began to feel more confident about his skills as an information seeker.

Finding 2: "I'm headed in the right direction." Gary entered UCC very uncertain about his abilities, and had to make up a lot of ground very quickly. However, by the time he reached Composition II, Gary was beginning to believe he had what it took to get through college, and he learned much more about information seeking while constructing his webliography. Although he had a great deal of experience with addiction and recovery issues personally and through his volunteer work, he was less skilled at finding appropriate information in the scholarly literature.

Upon starting the webliography, Gary almost immediately decided to consult a librarian. I asked him why, and he responded,

When I first started here, he was in a different position back then than he is now. He can't give me quite as much of a help now. But he looked over some of my papers... and gave me some pointers on which way to go.

Gary had established a working relationship with this librarian very early in his time at UCC, and they had grown to know and trust each other. For that reason, it only

seemed natural to consult him when he had to take his research skills to the next level, despite the fact that the actual ability of the librarian to help had diminished.

However, Gary described benefits from his mediation experiences that seemed to transcend the mechanics of search terms and limiters, and the APA citation format.

I guess if anything, it's the assurance that I'm headed in the right direction. Not sure about anything with college, prior to getting involved with this. Having somebody say, "You're headed in the right direction," is gravy because when you have...negative feedback all your life and then you find something that can get [you] the positive [feedback].

Finding 3: "You've got to get in there and swim." Gary said that he depended a great deal on tutors, his friend at the library, and his wife to survive his first few classes.

For my abilities to improve to where I was going to be able to finish even an associate's I had to be willing to step out and ask for help. ...you come into this world alone and you leave this world alone, but God didn't make it to where you're supposed to be alone while you're going through [laughter] the process.

That said, Gary didn't want to depend on his friends and mentors for every detail of his academic work. As he put it after describing an experience where Ms. B. assured him that he had what it took to complete a task without her help, "You've got to get in there and swim". He had taken more initiative with this semester's work, only consulting his librarian friend for help with search terms, and not giving up when he didn't immediately find what he was looking for. As he put it,

I have to be careful to...go through the entire process. Because I can be looking for one thing and come up with something else. But I have to step back and say,

"Okay, that didn't work. Now, where were you trying to get that computer to go when it went over here?" And not to get myself too dad-gum frustrated to just give up. ...when I step back away for 30 minutes or whatever it is, it's not that I quit. I'm regrouping.

Perhaps the most significant proof of Gary's growth this semester was that his classmates were starting to ask him for help and advice instead of the other way around. As he dramatically described his mental reaction to those requests, " 'You want *me* to help you?' ...I've had people say, 'I've seen you catch on with this, can you give me a pointer in school work too?' And that makes you feel pretty cool."

Becky's Information Search: "I just get right on there and go now."

Becky decided to research her planned career of elementary education in her webliography assignment. One of two students I actively recruited for the study based on in-class observations, Becky eagerly agreed to take part. We sat at a table in a quiet corner of the Forum to talk about her experiences searching for information, and the help she sought out and gave to others along the way. During our time together, two findings emerged about Becky's experiences with search mediation, and the influences those encounters seemed to have on her information search process as a whole.

Finding 1: Computer inexperience complicates information seeking. Whether facing an obvious problem like creating a search query, or seemingly tangential issues like creating and correctly formatting documents in Word, Becky most often sought out help because of her inexperience with computers. Becky had never used a computer in her personal or professional life before going to UCC, and despite having completed two English Composition classes, had not yet taken the computer skills class required by the

college. As she ruefully noted, "I didn't know how to send an email or anything. It was really bad. I was in bad shape."

Using the library databases was a particularly difficult challenge, and Becky had to ask for help multiple times before she could even learn to navigate to the database she needed.

He showed me the first time, and probably the first ten times, and now I can do it. Just click on library, and then you go to articles, and then you go by subject, and after you press that, it'll be something that says Academic Search Premier, and you click on that and it'll take you there.

Of course, once Becky managed to navigate to the database she wanted to use, she still had to figure out what she needed. Never having done anything more complex than a basic Google search, Becky turned to librarians, both by drawing from the basic information she had learned in a library instruction session, and later, by visiting one face to face.

He's the one who showed me that I could download short e-books and articles and stuff actually on my flash drive, instead of printing them all out like I'd been doing. Then I can...work from home. ...that guy over there was really informative. He was a good help.

Fortunately, both her friend at the library and Mrs. B taught her some basic searching skills that she felt would serve her well going forward.

Even professors have to sit there and play around with it. ...I've learned to think outside the box. 'Well, this happened in this year, maybe I should put this year in or this person was involved in that time, maybe if I put this person's name in'...

You're not going to mess anything up. Just get on there and open some stuff you don't need, and fool around until you figure it out.

Finding 2: Becoming an independent information seeker. Near the start of our conversation, I asked Becky if she asked anyone for help while seeking information for her Webliography. She replied that she hadn't. However, as I began asking more questions, it became clear that she had asked numerous people for help with aspects of her information seeking, including Mrs. B, a librarian, the writing center tutors, and most often "Kevin", the IT help desk employee mentioned in Section B-1's discussion and by several other Tisdale Campus students.

Becky described a typical mediation encounter with Kevin, in which he helped with document formatting, citation styles, and successfully searching within a library database.

I used to...ask him to set up my MLA format, and now I'm actually getting pretty good at that just by practice. And this webliography kind of made me real familiar with [using the databases], because when I was doing it for my history class I was like, 'Oh, I can do this now.' Slowly but surely, one thing at a time, I could do without having to get up and get him [chuckles].

Becky's emphasis on becoming a more independent information seeker emerged throughout her stories of mediation. When summing up her mediation experiences, she noted that

I feel a lot more confident. I could do it on my own if I had to; I *do* do it on my own now. ...I can just get on there and scan through it. I've been showing other people how to do it now.

Becky went on to describe her experience helping a classmate find and cite information with no small amount of pride in her voice.

She asked for help on her webliography, and I was just showing her how to do it [on Easybib] real quick. It's another little website that'll help you cite stuff... You can actually go in there and just put in the subject, and it'll give you websites to choose from that are already cited [in MLA format].

Toward the end of our conversation, I asked Becky what she learned that would serve her during her information searches down the road. She replied,

I probably won't have to ask anybody for help next time, which is a big, big, big thing. ...[Kevin] might be gone to lunch or one of them might be gone, and you don't want to want to sit here for an hour or maybe even have to go home and delay it for a whole day, and come back the next day... Setting up Word, getting onto Academic Search Premier, getting your sources. If you can't do any of that you're just stuck until someone can help you.

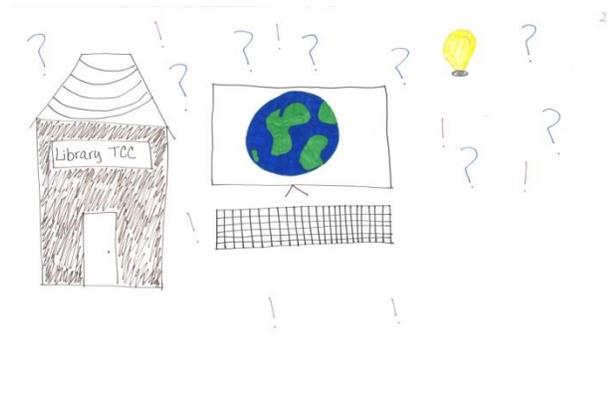


Figure 5: Becky's drawing

The themes embodied in Becky's drawing (see Figure 5) also reflect her deliberate use of mediation encounters to become a competent and independent information seeker.

When asked to describe her drawing, Becky said,

These are all question marks and the light bulb represents like an epiphany, like discovering something, learning something. This building is a UCC library which is filled with lots of information and people that can help you. The main source of everything is the computer. I put the picture of the world in there because anything you need in the world or even in the atmosphere you can find in the computer. ...The computer's the most important thing. The internet just really opens so many doors. ...You could be sitting at home and have an argument with somebody over which is right and which is wrong. You're just like, "Well, let me Google it real quick. We'll just answer this right now." That's really good.

Eric's Information Search: "I always try to make sure it's right."

Eric's presentation for his webliography, in which he used an "Epic Rap Battles of History" video featuring Mozart and Skillrex in his discussion of his planned career as a music producer, suggested he had a flair for creativity and music. Eric, wearing jeans and a black button-down shirt, was somewhat soft spoken in his interview, and rarely chose to elaborate at length on responses even when prompted. However, three intriguing findings emerged from our conversation.

Finding 1: "I always try to make sure it's right." Eric stated he consulted search mediators early and often. He focused on school-affiliated mediators (though "not librarians"), stating he only wanted to consult "the best" people to make sure he was selecting the right kinds of sources and using them in the proper way for his assignments. Ms. B, who holds a degree in librarianship as well as a PhD in English, was a regular source when Eric was unsure whether a particular source was appropriate. The writing

tutors, although not teaching him to search for information per se, helped him as he integrated and synthesized his information and attempted to write it up in a clear way.

As our conversation progressed, I asked Eric if he had assisted others with their information seeking. He brought up his changed approach to social media, due to a clearer understanding of plagiarism and evaluating information. Eric said,

I check my sources [on Facebook]. ...Also, things I post, I usually know a lot about. So...I know to give that person credit. A lot of people you'll see put a song lyric and it's like, "You didn't just make that up. Who wrote it?" I try to give credit to the authors and stuff like that now.

Finding 2: "That's really perfect for what I wanted to say." Eric began his assignment with a clear idea about working in the music production industry. He was interested in exploring

the fun side of music--why somebody would want to do it, other than the boring side of why they wouldn't [laughter]. So I just looked for...an author or an article on Google Scholar about something creative or how they would go about lyrics or playing an instrument in creative ways, and that's what I tried to look at.

Eric used both in-class instruction on information seeking and a worksheet provided by Mrs. B to design his information search strategy, which was largely self-directed. Several times in discussing his search strategy, he discussed how he would go about searching for information that backed up his thesis. Eric elaborated,

Google Scholar was my best friend. I would just Google a couple of words that might hit the target of what I was looking for and just read through articles, and

maybe pieces of a book and just kind of see which best described what I was trying to say.

As our conversation continued, I asked him about the choice of the Epic Rap Battle video in his presentation, and he enthused at length, saying,

I've always done a lot of YouTube, so I just know the videos and I watch a lot of those Epic Rap Battles. ... I remember seeing that one and I'm like, "This would be perfect for exactly what I'm wanting to say".

When I asked him to elaborate what he meant by the video being "perfect" information for his assignment, Eric replied, "[It was something I] kind of agreed with. I've really wanted to show more than just the topic of music producing, the fun of music and the creativity. ... I just wanted people to enjoy [my presentation]".



Figure 6: Eric's drawing

Finding 3: Managing time and "Wiping out". Eric's whimsical approach could also be seen in his drawing of his information search process (see Figure 6), which included Sonic the Hedgehog and a skateboarder falling while attempting to ride down a flight of stairs. When I asked him to explain his picture, he said, "You've got to find [information] fast, and right away. That's how it is... And that was somebody wiping out.

So sometimes you can wipe out. ... [When you wipe out] you got to try again. Get back up and keep trying, keep searching."

Hunter's Information Search: A tale of Three Images

Hunter's stringy, chin-length brown hair curtained his face as he hunched over an 11x17 sheet of blank paper, sketching intensely. I had asked Hunter to take 10 to 15 minutes to draw a picture describing his experience seeking information for his webliography about the 2014 Ebola outbreak. However, given Hunter's description of himself as an artist, and the obvious effort he was putting into his sketch, I opted to hang back for as long as he kept working. After about 20 minutes, he sat up, brushed his hair out of his eyes, and gave me a tentative smile.

I soon learned that Hunter had actually only created one of three possible drawings that had crossed his mind. After he declined my offer of more time to sketch those drawings, I asked him to describe the two drawings he had not created as well as the one he had. Hunter proceeded to describe a series of visual metaphors that he used to make sense of his information-seeking journey and the mediators he met along the way. Figure 7 in this section is Hunter's actual drawing, and the second two are images that Hunter described as inspiration for the other two parts of his imagined "triptych". Hunter's imagery blends high art and pop culture, and when taken as a whole depict the way in which this artistic information seeker made sense of his mediation encounters.



Figure 7: Hunter's Drawing

Finding 1: an image of self-reliance. Several times during our conversation, Hunter had expressed the difficulty he had asking help, and initially stated he had done it all on his own. However, as his interview progressed he mentioned that he had consulted an older online friend, his mother, and a psychology professor, "Dr. T", whom he admired very deeply. Intriguingly, Hunter volunteers in the 3D-printing lab at the local public library, but never mentioned asking his librarian supervisor for help with his information seeking. Hunter explained that the drawing he completed, shown in Figure 7, described a series of mediation experiences with his friend from "Second Life", whom Hunter considered to be a skilled writer, researcher and proofreader.

This represents, sort of like the communication block I go through with my friend, reviewing it to somebody online. Although it is a big help, a lot of the time she's like "What are you trying to say with this?" And I'm like "I don't know." ... This is me crinkling my essay— Just like super furious about it, "I gotta get this done, I need to get three hours of sleep tonight!" [laughter]... I'm really reaching out because I'm the kind of guy that doesn't ask for help unless he really needs it. ... If

I can't do this, then something's seriously wrong and I need to change something.
So I'm going to ask somebody and say, "I don't know what to do!"



Figure 8: Still from Kill Bill: Volume 2 (2004), copyright Miramax Pictures. Used for educational purposes as defined by the fair use provision of United States Code, title 17, section 107.

Finding 2: Approaching the Guru. Hunter then described his planned second part of his triptych, a "silly" one where he was "climbing up a really big staircase to this Tibetan temple to ask a wise man for advice... Just sitting there with a big Fu Manchu down to the floor, he's like, 'Can I help you?' " When I commented that it sounded like something out of *Kill Bill*, he grinned in approval at my recognition of the reference and nodded, saying, "I'm a big movie watcher so a lot of my [art] is pertaining to, you know, referencing something."

Upon reflection, I realized that Hunter's imagery of an Asian guru might relate to his Psychology Professor, a particularly influential search mediator whom Hunter consulted often. At several times in our interview, Hunter spoke in deeply flattering and slightly worshipful terms of how much he's learned about writing and information seeking from "Dr. T", a psychology professor who had taught Hunter a great deal about

information seeking, not all of which might be considered orthodox by more traditional faculty or instruction librarians.

Always use Wikipedia, but never list it [chuckles] . . . I've even been told this by the great "Dr. T" [chuckles]. He said, "The first thing you want to do when writing a paper with a certain topic--whatever topic you choose-- the first thing you should always do is look up a Wikipedia on it." Then he said, secondly, "Never cite the Wikipedia. Only get the information from it." And third, he said, "Don't tell anybody I told you that [chuckles]."



Figure 9: Salvador Dalí, *The Persistence of Memory*, 1931. © 2015 Salvador Dalí, Gala-Salvador Dalí Foundation / Artists Rights Society (ARS), New York. Used for educational purposes as defined by the fair use provision of United States Code, title 17, section 107.

Finding 3: The Persistence of Assignment Deadlines. Once again, Hunter turned to an existing artwork (see Figure 9) to discuss his third image of his information-seeking experience, though one rather more highbrow than Quentin Tarantino's:

I was just thinking about, like the frustration of writing a paper without, of course, procrastinating and then doing it in a timely fashion. And then what I always do,

just can't help, it's finishing it on the night before. . . . I was thinking of doing a representation of Dali where there was a clock hanging and I was just out in a field, like picnic basket next to me, and then the essay in front. And the clock is drooping down and I'm looking at it with a worried expression on my face. And I'm hunched over like this, melting. [laughter]"

Hunter picked both sources and mediators based on their convenience. Hunter didn't just consult his mother because she shared his interest in the Ebola virus and was able to point him to websites by the World Health Organization and other government entities, he talked to her because "she was there" and convenient. Based on Hunter's description, his friend on Second Life was available to chat at almost all hours, and a remarkably good sport about providing feedback on his work on very short notice. Hunter described one situation where he needed her to proofread and provide comments on the content of his paper, saying, "Even if I finish and it's like three in the morning [before the deadline], I'll just be like, 'Hey, hey, hey I need you to read this. I don't care, you can have a coffee.' [Chuckles]."

As he left our meeting, Hunter confessed that he was afraid he had flunked Composition II because of several missed deadlines. However, Hunter shared some good news a few days later when he emailed me a PDF copy of his webliography. Apparently he had turned in just enough on-time assignments to preserve his passing grade. I smiled for Hunter's small triumph, as my fieldwork drew to a close.

Summary

This chapter presented contextual information and a set of case reports depicting the information search mediation experiences of eight students enrolled in three different

sections of Composition II at Urban Community College. Some issues, such as a shortage of time, were almost universal in students' experiences. However, others, such as the desire to use lessons learned in search mediation encounters to become either a more independent or interdependent information seeker, suggest intriguing contrasts in the ways these students made sense of their search mediations, their information-seeking journeys during Composition II, and even information-seeking skills themselves. In the next chapter, which forms the second half of my findings, I use Stake's multiple case analysis procedure to explore five assertions about common themes found across many cases, and which in turn seem to shed light on the research questions that drive this study.

CHAPTER V

FINDINGS, PART 2: CROSS-CASE ASSERTIONS

The second stage of Stake's (2006) cross-case analysis procedure is the development of multi-case assertions. The results of this process are presented in this chapter as the second part of my research findings. Stake suggests beginning the cross-case analysis by returning to the original research questions, and identifying which aspects of the research questions seem to be most prominent across all of the cases.

Overview of Cross-Case Themes

Five themes emerged and reflected the aspects of the experience of search mediation, mediation's effect on the information search processes explored in this study, and mediation encounters' potential influences on future information-seeking activities. Organized by research question, these themes are:

1. What are the characteristics of information search mediation encounters as experienced by Community College students?
 - a. Theme 1: Factors involved in selecting a mediator
 - b. Theme 2: Characteristics of the mediation encounter

2. How do students use search mediation encounters to navigate the information search process?
 - a. Theme 3: Influences of mediation on the information search process
 - b. Theme 4: Influences of mediation on the presentation of information
 - c. Theme 5: Influences of mediation on future information seeking

After determining the themes most important to the exploration of the research questions, Stake (2006) describes a process of identifying and refining multi-case assertions. Multi-case assertions express one or more themes or the general research topic, in this case information search mediation, across many or all of the cases in the study. After completing an iterative process of considering and comparing cases and individual case findings to one another, six assertions relevant across multiple students' experiences emerged from the data. Five of these assertions relate to one of the specific themes relevant to the research questions, and the sixth assertion is applicable more broadly to information search mediation as a topic, or quintain. In this chapter I will present and discuss the significance of these assertions, provide supporting and complicating data, and identify potential implications to be explored further in the next chapter, my discussion of the case findings.

Assertion 1 (Selecting a Mediator):

Information seekers selected mediators who they believed could address their needs.

Assertion 1, the assertion relevant to characteristics of participants' descriptions of how they selected mediators to help them with their information seeking, may seem obvious to the point of triteness. However, it is no longer enough to understand who these

information seekers asked for help, as Kuhlthau (2004) and Tsai (2012) did, but rather the possible reasons why they selected the mediators they did. In this study, different students described different types or levels of search uncertainty, depending on personal information-seeking weaknesses, issues specific to their particular topics or assignments, or the challenges of the context in which they undertook the search. These individual needs led to a variety of idiosyncratic rationales in selecting search mediators. However, this variety masks a deeper common truth about selecting search mediators. Students in this study selected the mediators not due to ignorance of other alternatives, but instead because they trusted those mediators to most effectively and efficiently guide them to the information they needed to complete their assignments and meet their goals.

The students interviewed for this study claimed to have a good understanding of their strengths and weaknesses as information seekers. For instance, Gary was very candid about the intellectual and emotional struggles he faced as a nontraditional student who needed to take quite a few developmental courses to become ready for college work. For that reason, he latched on to a librarian at his campus very early on in his time at UCC, and continued to consult with him even when that librarian's job responsibilities changed. Gary also specifically noted his challenges with keyword searches, and that he selected a mediator that he thought could help with that weakness. In a similar vein, Becky not only struggled with constructing database searches, she had rarely used a computer before returning to college. As she noted, "I didn't know how to send an email or anything. It was really bad. I was in bad shape." Therefore, she found a helpful professional who worked at the Forum (student computer lab and commons area) help desk, and consulted him on both technical and information search-related questions.

Students also mentioned seeking out particular search mediators who they thought would be the most helpful with their particular topics. The most notable example of this dynamic was Kaliq. For his older and slightly obscure topic, a murder that took place in the 1950s, Kaliq initially struggled with finding appropriate sources at the library or in Google. For that reason, he reached out to journalism professors at several universities beyond UCC to determine if there were better resources or strategies he could use for this particular topic.

In a subtler way two other students took similar strategies in selecting mediators. Hunter, while seeking information on Ebola for his webliography, consulted with his mother, who had an interest in the epidemic and looked up a great deal of information online. She directed him to several useful resources such as the CDC website. Frank, who valued his family and community as the most important resource in his life, consulted a relative with a PhD, assuming she would know about the nuances of *Antigone* simply because of her degree. She opted not to help him with his information need, but spoke to a deeper challenge, his insecurity about exploring a topic very foreign to his knowledge base and background. As Frank related, his niece responded, "You're a writer. You can do this. You can do this.' And I ended up making an A on the paper".

Finally, students in this study reported approaching search mediators best positioned to help them account for challenges created by the contexts in which they were doing their searches, most often a time shortage caused by jobs, families, and other non-class activities. Kaliq, for instance, didn't just approach experts in journalism because he thought they would provide the best searching strategies; he also approached them because they would provide the most *efficient* searching strategies. In a similar vein,

Hunter regularly approached a friend he knew on the online community *Second Life* for feedback because she was always around, especially at odd hours, and was surprisingly willing to help him meet tight deadlines. "Even if I finish and it's like three in the morning [before the deadline], I'll just be like, 'Hey, hey, hey I need you to read this. I don't care, you can have a coffee.' [chuckles]."

Gary, Becky, Kalig, Hunter, and Frank all shared one or more rationales for selecting the mediators they did. Each of them either shared or implied a rationale for asking a given person for help with challenges to their information seeking. These rationales seemed to go beyond mere convenience or ignorance of other alternatives. Unlike Kuhlthau's (2004) findings, most students in this study seemed to know the value of librarians as search mediators, and several made favorable comments about the library instruction that they had received in Composition II or other college classes. Some, such as Kalig, moved on to other mediators after finding few useful sources during his mediation encounter with a librarian. Others, such as Hunter, were up against a deadline and too strapped for time to wait for the library to open in the morning. Even Gary seemed to gravitate to his librarian mediator more because of the comfortable, supportive relationship built up during a long-standing collaboration rather than his information-seeking skills in and of themselves. In short, students seemed to select mediators that they judged capable of filling their knowledge gaps. However, in many cases the degree to which a student felt comfortable admitting their vulnerability and ignorance about a topic was even more important to mediator selection than the mediator's subject matter knowledge.

Assertion 2 (The Mediation Encounter):

The ideal mediation encounter provided straightforward answers in a safe space.

In addition to the selection of search mediators, participants in this study talked a great deal about what took place in the encounters themselves. As a general rule, the students in this study tended to take a transactional approach to their encounters, initiating mediation only when they had specific goal in mind. Students also seemed to prefer interactions that arrived at what they saw as the core of the matter as quickly and clearly as possible, though their goals were sometimes subject to change depending on what happened in the encounter. Finally, students seemed to prefer engaging in mediation encounters in spaces where they felt safe. In an echo of the previous assertion's discussion of the role of emotional security in mediator selection, this observation suggests that students may feel a sense of vulnerability when asking a search mediator for help with information seeking even when the topic itself is relatively innocuous.

Ana and Hunter were both very focused on using mediation to address specific concerns that had arisen during the early stages of their search process. Ana simply needed more sources on her topic, the BTK serial killings, and was looking for the most efficient way to get to her goal. For that reason, she largely eschewed asking people for help, and instead turned to Google, a non-human search intermediary that she felt she could trust to lead her to useful information quickly. She found the information she needed, but seemed to feel guilty as she described her choice in a near-whisper with averted eyes. As the interview progressed, however, either my status as a researcher or my lack of judgment about her information search strategy made her feel confident enough with me to assert, "Yeah, Google, you're my best friend." Hunter, on the other

hand, conducted all of his mediation encounters with human beings, but had similarly focused goals. He knew his mother was familiar with reliable online sources on his research topic of Ebola, and she indeed pointed him in a way that took him where he wanted to go. Later, as he was preparing his webliography in the final stage of the search process, he contacted his friend online with the express goal of making sure that his assignment was written well and was free of typographical errors.

The students in this study also seemed to prefer search mediation encounters that resulted in straightforward answers to their well-defined questions. Gary enthused about his favorite librarian's knack for giving him "good words" to use when searching the databases for a particular topic. In a similar vein, Hunter tended to consult the same mediators over and over for multiple assignments. He found the experience of having to explain an assignment or topic to a mediator "frustrating", and preferred to work with people who immediately understood his needs with little clarification. For that reason, Hunter only consulted with his selected mediators (who interestingly did not include the librarian he volunteered for at a local public library) as a last resort and with frustration. Frank described his search for information on *Antigone* at his family reunion where the niece (and PhD holder) who he consulted for help reframed the problem and gave him the reassurance that he didn't realize he needed. However, it seems unlikely that a mediator who was less convinced of his skills as a writer could have helped Frank look at his problem through a different lens.

Running through Frank's mediation experience at his family reunion, and most of the other encounters shared in this study, is an undertone of fear and vulnerability. Few students stated outright that they were scared to ask for help. However, an undertone of

anxiety and uncertainty existed in several of their comments, particularly Ana's guilty confession that she preferred Google to a human librarian, and most students' preferences to return over and over again to a few trusted friends and experts. However, the most evocative description of the vulnerability inherent to search mediation came from Becky, the self-described "computer illiterate" student who struggled to search library databases at a time when she could barely manage to set margins in Word.

Becky luckily found a helpful mediator in Kevin, the help desk staff member at the Forum's computer lab. She latched on to him for all her information needs, from style formatting to narrowing searches in the library databases. As our conversation progressed, she shared a moving description of the vulnerability she felt when in a position of needing help, and the importance of finding a person she could trust to guide her through an unfamiliar landscape. As she put it,

Sometimes you come in here and he might be gone to lunch or one of them might be gone, and you don't want to want to sit here for an hour or maybe even have to go home and delay it for a whole day. ...Setting up Word, getting onto Academic Search Premier, getting your sources, if you can't do any of that you're just stuck until someone can help you.

For Becky and others in this study, engaging with a search mediator seems most likely to take place when the feelings of vulnerability caused by asking for help are outweighed by the fear of failing in her information search—and by extension, her assignment. Students' apparent preferences for limiting their mediation encounters to the bare minimum needed, what Hunter called a "last resort," seems to be a rational choice from their perspectives. In the interests of not drawing un-needed attention to my

positionality as an instruction librarian, I did not ask students why they did not consult librarians or consulted non-librarian mediators. However, based on my findings in the pilot study for this dissertation (S. Clark, 2014), it seems possible that the participants in this study may have found the prospect of asking an unfamiliar authority figure for help to be too intimidating a prospect. A student like Ana may intellectually understand from her information literacy instruction sessions that librarians are skilled, friendly information professionals. However, based on these students' choices and behaviors during mediation, it seems possible that an information seeker's sense of security may be as important an element as a mediator's actual knowledge for a successful completion of a mediation encounter.

Assertion 3 (The Search Process):

Students typically used lessons learned via mediation to address perceived weaknesses in their information search abilities needed to complete their assigned information search.

The search mediation encounters explored in this study took place within the context of a broader information search process. For that reason, the bulk of the students' interview responses explored the influence of mediation on the search process as a whole. In addition, some of the classroom observation sessions provided insights into this area as well. When considering the data set as a whole, it seems that students typically sought out and engaged in mediation encounters that targeted their perceived information-seeking weaknesses, in the hopes of gaining cognitive, emotional, and procedural insights that would aid them in finding and synthesizing the information they need. This supposition was borne out by students' own assessments of their mediation encounters. Encounters

perceived as most successful seemed to have positive influences on the remainder of the information search.

When writing her paper and presentation on readers' attitudes about Cozy mystery novels, Danielle struggled with finding sources she considered reliable or, in her words, "real." For that reason, she consulted Mrs. B, who she knew could explain both what reliable sources looked like and where to find them. Based on what Danielle learned from Mrs. B, her searching activities focused closely on the library databases. She also used Mrs. B's criteria to evaluate websites and other less scholarly sources. By contrast, Kaliq chose not to use the tactical search skills provided by the journalism professors he contacted specifically for that purpose. They provided him the advice he needed on how best to acquire old newspaper articles and other primary sources not readily accessible on Google or the library's resources. However, Kaliq chose not to take that route, deciding based on the time available that he could write a paper that met his standards with what he had on hand. That said, it would not be accurate to think Kaliq's consultation with these mediators did not affect the actions he took in his search process. Instead, he considered the possible approaches, weighed the pros and cons based on a fuller understanding of his options, and made an informed decision.

Mediators also seemed to influence the emotions that these information seekers felt as they navigated the search process. Gary provided a particularly poignant example of this. Gary seemed all too conscious of his weaknesses as an information seeker, and that self-knowledge seemed to lead to a deep insecurity that sent him to numerous search mediators. However, as the semester unfolded, his wife, his librarian friend, and even Mrs. B encouraged him in slightly different ways to spread his wings and become more

self-sufficient, rather than asking for help every time he even hit a minor roadblock. Gary began to take a more independent approach to the trial and error nature of information seeking. He reported that he was slowly gaining the confidence “not to get myself too dad-gum frustrated to just give up. . . .when I step back away for 30 minutes or whatever it is, it's not that I quit. It's, I'm regrouping." Frank's experiences at the family reunion seemed to have a similar impact on the emotional aspect of his information seeking. Hearing a respected niece with a PhD say “You're a writer. You can do this. You can do this," gave Frank the confidence he needed to believe that he had what it took to make sense of a relatively foreign and intimidating topic like *Antigone*.

Finally, an information seeker's thoughts about and understanding of the topic being explored seemed to evolve and become more focused as the search process progressed. Intriguingly, though, students seemed less likely to use their search mediation encounters as a means to make sense of their topics; instead they tended to use them for procedural training or emotional support. Hunter learned a practical way to use Wikipedia to wrap his brain around an unfamiliar topic from his respected psychology professor, Dr. T, in the course of a conversation about another research assignment. This was a serendipitous piece of advice, but one Hunter relied on as he learned how to navigate the cognitive domain of information seeking for his paper on Ebola.

However, another student, Eric, challenged the implicit assertion in Kuhlthau's model that students learn more about a topic through information seeking. In his project about careers in music production, Eric began his information search with clearly settled ideas about his topic, based on previous knowledge grounded in his personal interest in music. Eric specifically used mediation to learn how to find tools that would be useful in

finding information that was “perfect for what [he] had to say”. In addition, some students, such as Kaliq and Becky, seemed to feel uncomfortable with using mediation to help them think through a topic, contending that they wanted their arguments to be “original”, in Kaliq’s words, or at least, as Becky said, to arrive at them “independently”. Other students, such as Frank, felt as though they needed to bounce ideas off of family and friends in order to come to a complete understanding of a topic. As he put it, “...They're not the final authority or The Authority, but yet they're going to be honest.”

The students in this study seemed to use their search mediation experiences to navigate procedural, emotional, and cognitive roadblocks of the information search process. However, they also seemed to use mediation to fill in known or perceived weaknesses that kept them from successfully completing a search, and rarely discovered an unknown gap or weakness in their search strategies. Although these students appeared to believe they understood their personal strengths and weaknesses in information seeking, students who felt particularly sure about their knowledge and opinions on a topic, like Eric, might not seek out mediation that could provide a more complex and nuanced understanding of their topic, as well as unknown skills or coping mechanisms that could help them complete their searches with greater confidence and competence.

Assertion 4 (Presentation of Information):

Mediation encounters varied widely depending on students' goals for an assignment.

Information seekers can and do have widely varying goals or visions for the end results of their searches which, in the case of these students, were the completed papers, presentations, and webliographies needed for their class assignments. All of the students in this study began with their end goals in mind, and those goals shaped their information

searches in general, as well as their mediation encounters. Hunter, Kaliq, and Frank's stories are particularly pertinent examples of information searches that were designed to meet four very different goals.

Hunter seemed at times to think of assignments as simply deadlines that needed to be met to achieve a passing grade, rather than as opportunities to succeed or grow. This was most clearly described when discussing one of his potential pictures that he did not draw, his riff on Dali's *The Persistence of Time*. Hunter said, "The clock is drooping down and I'm looking at it with a worried expression on my face. And I'm hunched over like this, melting [laughter]". Because of his time anxiety and lack of interest in any goal beyond moving on to the next deadline, Hunter tended to consult the most convenient people possible, such as his mother, and a friend on Second Life who had a knack for proofreading and finding holes in his writing. A few weeks later he actually texted me just to let me know that he had passed. For Hunter, earning a passing grade seemed to be his only goal for Composition II, and he managed his information seeking and mediations accordingly.

Kaliq, by contrast, didn't just want to write an acceptable paper, he wanted to create an "exemplary" paper. For that reason, he wanted to go above and beyond with his information seeking, and his decisions showed it. After selecting (and deciding to stick with) his very ambitious topic of a 1950s-era murder, Kaliq initially wasn't satisfied with the sources he found at the library, hence his decision to consult with journalism professors who had in-depth research experience in topics like his. As discussed in the previous section, Kaliq decided that the cost of the time required to take their advice outweighed the benefits, and that he could complete his research assignment without it.

However, that did not mean that he lowered his standards for his completed project. As I observed him during a peer review session in his classroom, he talked to his partner about wanting to create an excellent project, and bragged to Ms. A that he had become a "research badass." His drawing assignment and post-project reflection bore this attitude out as well. He knew he had gone above and beyond in his information seeking, and hoped that his efforts would be rewarded with the gigantic A depicted in his drawing.

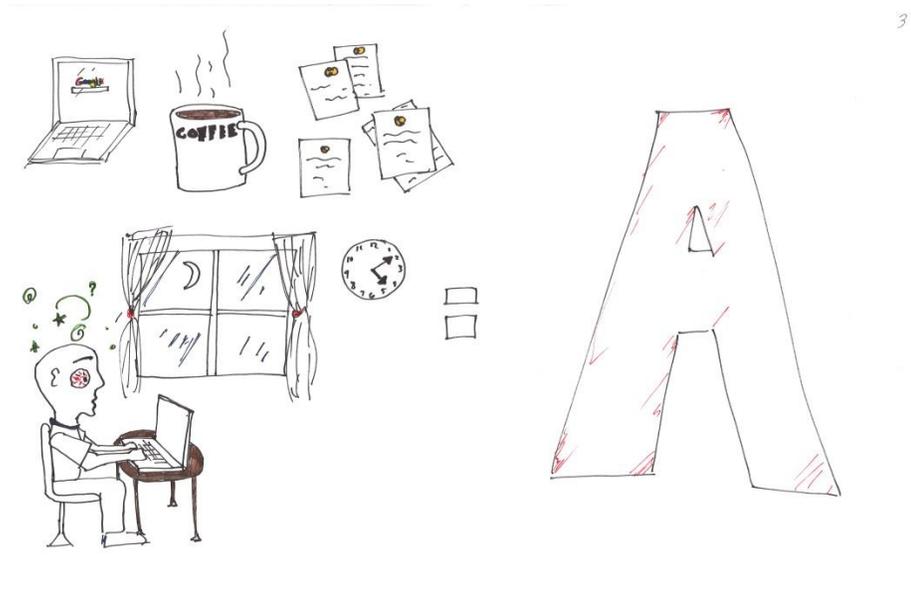


Figure 10: Kaliq's Drawing

Frank had even higher ambitions for the outcome of his information-seeking process. Frank, as mentioned in my discussion of his assignment on *Antigone*, was very happy to receive an A in that class. However, for Frank, grades on research assignments like his Composition II project on a mystery novel author were simply signposts on a broader journey. Frank didn't just want to complete an information search that would generate an A paper, he wanted to generate an information search that would make him a more educated person. One can see elements of this drive in his comments during my in-class observations of section B-1, when he complained at length about professors who

created arbitrary and poorly explained assignment criteria that seemed irrelevant to actually learning more about a particular topic. In our interview, Frank explained his goals at greater length, and how information seeking and search mediation fit in. Frank reveled in what he described as a "boundless" information landscape, and found information-seeking road blocks and dead ends for his project intriguing, rather than frustrating. For that reason, he consulted a wide variety of search mediators simply to get other perspectives on how one could understand a given topic. Even if he found irrelevant information when working on an assignment, he seemed to see that as a bonus. As Frank succinctly put it, "Education shouldn't limit you, but it should expand you".

Each of the students in this study had different and equally valid end goals for their research assignments, and those goals informed and were informed by their search mediation decisions and experiences. Hunter simply wanted to pass his class, approached his mediation encounters accordingly, and gained the information he needed to succeed in that goal. Kalig, as can be seen in his participant drawing and his reflection paper, was focused tightly on getting an A on his paper. He was willing and able to seek out any mediator or source that he thought would get him closer to that goal. Despite his genuine interest in a topic he found inherently fascinating, Kalig was equally ruthless when further information seeking seemed as though it would take him beyond the point of diminishing returns for his GPA. Finally, Frank's information-seeking journey led to the end goal of becoming an educated person like respected friends and family members. His approach to information seeking and search mediation was more exploratory and less utilitarian than Kalig's or Hunter's, but was appropriate to meeting the ultimate goal he set for his own Composition II search process.

Assertion 5 (Future Information Seeking):

Mediation encounters influenced information-seeking behaviors in future searches.

Almost every student in this study discussed how the lessons they learned in their Composition II search mediation encounters helped or might help them in future information-seeking activities. These comments took several different forms. Some students discussed how their mediation encounters made them more independent information seekers. Others provided tangible examples of using their new information skills at home or even on social media. Finally, a few students proudly shared their experiences of using their enhanced information-seeking prowess as search mediators for their friends and classmates.

Over and over in our conversations, Becky talked about her need to become more independent in her information seeking. Having entered Composition II in "bad shape" when it came to both computer literacy and information literacy, she found herself in a situation where she needed to ask for help from search mediators for even the most mundane tasks. Mediation gave Becky the confidence and competence needed to complete future information searches much more independently. As she noted, "I feel a lot more confident. I could do it on my own if I had to; I *do* do it on my own now. ... I can just get on there and scan through [the library databases]." Hunter, who fully admitted that he only consulted mediators as a "last resort," was of the opinion that as he gained more skills, he would need to ask for help less often.

That said, some students expected their future information seeking to become more *interdependent*, as opposed to independent. Frank saw his preference for bouncing ideas off of friends and family in his community as a strength of his information-seeking

approach, not a weakness. Similarly, Gary, though much more confident in his abilities to stand on his own as an information seeker, didn't necessarily expect or desire to become a completely independent information seeker. As he eloquently put it, "you come into this world alone and you leave this world alone, but God didn't make it to where you're supposed to be alone while you're going through [laughter] the process."

As was presented in the definitions of information and information seeking used for this study, the vast majority of information seeking is not related to a classroom assignment. Several of the students in this study described how they used the skills they had learned during Composition II to find and evaluate information in their daily lives. Danielle described putting her information-seeking skills to good use in a way that wouldn't have occurred to her before-- when helping her husband complete household repairs. Eric took this progression one step further by using the lessons he learned from search mediators to overhaul his social media presence. He described completely scrubbing his Facebook presence of all urban legends, incorrectly cited quotes, and other items that he now saw as misinformation. In these seemingly basic ways, these students and others took the lessons they learned outside the classroom.

Finally, a few students specifically noted that they used what they learned to serve as mediators for other students in their classes, an impressive sign of mastery of the information search process. During my observations, I saw Becky standing near a classmate before the start of class, helping her find sources and create citations. When we talked about this encounter, her pride in her growing skills and ability to help another struggling information seeker shone through her tone of voice and body language. In another observation session, I watched Kaliq use what he had learned in his information-

seeking journey to help his peer review partner think through her topic and organize her thoughts about her topic. Ana worked in a symbiotic way with her friend at the library, paying back her friend's discovery of suitably "gruesome" photos for Ana's presentation by looking for sources that would help her friend with her research project. Perhaps the most poignant example of a student who became a mediator is Gary, who had started his studies with almost no confidence in his abilities. Over his time at UCC, he gradually grew to the point that he was actually being asked for information-seeking help by classmates. As he put it, "I've had people say, 'I've seen you catch on with this, can you give me a pointer in school work too?' And that makes you feel pretty cool."

Assertion 6 (Cross-theme):

Effective mediation encounters were those that that focused on the seeker's needs.

Upon taking a step back to consider all of these cases of information searches, a broader assertion emerged about the nature of information search mediation as a whole. Each of these students consulted mediators who they thought would be knowledgeable in the areas they needed to improve in order to succeed. However, the amount of knowledge a mediator had about a topic or search skill didn't seem to be the most important issue that determined a student's perception of an encounter's usefulness. Instead, students seemed to evaluate mediation experiences based on the mediator's perceived understanding of the student's strengths, weaknesses, and goals, and the usefulness of their advice to the student's situation.

Ana described two major mediation encounters, one with a fellow UCC student and another with her boyfriend. She described her mutual mediation session with her friend in glowing terms, as each helped the other find resources they needed for their

topic. Her boyfriend, however, didn't fare nearly as well in Ana's description. She seemed to feel that he didn't understand how important it was to her to write as well as possible, and was not terribly reassured by his somewhat perfunctory statements that the argument laid out in her paper was fine. Kaliq didn't report unalloyed success with either of his mediation encounters, though he found them both useful in their way. The librarian at the UCC branch library didn't have easy access to resources that Kaliq needed to meet his ambitious goals, and so he searched further afield. That search eventually led to the outside journalism professors, who gave him advice that he knew was excellent. However, Kaliq ultimately chose to go a different way. Although he very much wanted to get an A on his paper, he had to juggle that goal with a full time job, a full time course load, and two school-aged children.

One of Frank's mediators may have understood what he needed better than he did. At his family reunion, he was walking around, asking random relatives about *Antigone*. However, his niece understood that what Frank really needed from a search mediator was reassurance that he could find what he needed, and she gave him that emotional support. Frank's classmate Danielle was mostly comfortable with her information seeking, but needed concrete advice on evaluating sources. Mrs. B, whose teaching experience and library degree gave her the perspective to understand this common concern of students, provided some clear and useful tips.

Gary didn't get the answer he wanted when several of his mediators encouraged him to start taking a more independent approach to his information seeking. Upon reflection, however, he realized that he needed his wife, his favorite librarian, and his professor to reassure him that he was ready to spread his wings. Hunter's favorite

professor, Dr. T, seemed to understand that Hunter wanted the most direct route to learn the basics of his topic quickly, and he suggested Wikipedia as a good place to start. Eric, similarly to Danielle, consulted Mrs. B regularly when he had a question about whether a source was accurate, and he found her mediation helpful for similar reasons. Finally, Becky exclusively depended on Kevin at the IT help desk during her information seeking, because he understood her anxieties and had the knowledge she needed, even if some of her information-seeking needs were likely beyond his job description.

Each of these different mediation experiences is bound by a common theme: Students evaluated the usefulness and effectiveness of a search mediation encounter based on how it met their actual needs, even if the mediation encounter may have covered different territory than the explicit question. In a similar vein, students like Kaliq whose question was merely a surface expression of a deeper concern, were left unsatisfied by encounters that didn't address the totality of the information search need. Understanding information seekers' personal needs and concerns can be challenging, especially when the information seeker may not fully understand those needs him or herself. However, a successful information search mediation encounter seems to be one that most fully responds to a seeker's explicit and implicit needs.

Summary

After considering the case reports of eight Composition II students' information search experiences as a whole, six assertions about aspects of information search mediation emerged from the case-level findings. First, information seekers selected mediators who they believed could address their needs for knowledge of their topic or information-seeking strategies, as well as provide a sense of security and acceptance

strong enough to allow them to admit their knowledge gaps. Second, the ideal mediation encounter provided straightforward answers in a safe space. Third, students typically used mediation to address perceived weaknesses in their information search abilities. Fourth, mediation encounters varied widely depending on students' goals for an assignment. Fifth, mediation encounters influenced information-seeking behaviors in future searches. Finally, effective mediation encounters focused on the seeker's needs.

I contend that each of these cross-case assertions about information search mediation has potential implications for the scholarly field of information literacy, and practical implications for reference librarians, library instructors, and academic library policymakers. In the next and final chapter of this dissertation, I will summarize the preceding five chapters, before discussing each cross-case assertion in the light of relevant theoretical and conceptual lenses. After providing a fuller exploration of the potential strengths and weaknesses of this study, I will then explore the possible implications of each of the six cross-case assertions for information literacy research, theory, and practice. I will close the chapter, and this dissertation, with suggested areas for further research into this fascinating aspect of information-seeking behavior.

CHAPTER VI

DISCUSSION

The purpose of this study was to explore lower-division undergraduate students' thoughts, feelings, and actions as they engaged in and reflected on their information search mediation encounters over the course of a course-related information search process. Such a project has potential significance to information literacy theory, research, and practice. As was discussed in chapter 2, information literacy theory has begun to turn away from its progressive and neoliberal roots toward a stance grounded in critical theory. As I will discuss in this chapter, exploring the lived search mediation experiences of students engaging in course-related information seeking led to findings that may suggest both theoretical implications for this emerging paradigm and changes in information literacy pedagogy.

In this chapter of my dissertation, I will provide a brief overview of my research project, revisiting the research problem, questions, and methods employed in this study. I will then examine this study's findings through the Association of College and Research Libraries' (ACRL) Framework of Information Literacy (2015). After exploring possible implications of my findings as well as the limitations of this qualitative multiple case study, I will conclude with suggestions for possible areas of future research.

Summary of Research Design and Findings

As discussed in chapter 1, the revolutionary technological changes of the last 20 years have brought parallel paradigm shifts to higher education in general, and academic librarianship specifically. The academic library has been traditionally considered the heart of the university. However, studies by scholars such as Lynch, et al. (2007) suggest that administrators and other stakeholders increasingly expect their libraries to become nimble, transformational organizations that take the steps needed to provide the resources and support needed to foster faculty research and student learning in an undergraduate context.

Academic librarians have responded strongly to this challenge, engaging in both technological and theoretical innovation. Of most relevance to this study is the increased emphasis on information literacy instruction and reference services grounded in constructivist theories of learning. This progression is seen in the evolution of literature on Kuhlthau's (2004) information search process model, the formulation of and debate surrounding the 2015 ACRL Framework for Information Literacy, and the rise of critical information literacy as a theoretical lens through which to understand both information seeking and the role of the librarian as a formal information search mediator within higher education.

However, upon exploring students' information-seeking practices, patterns seem to emerge that problematize the assumptions surrounding the role of academic librarians as formal search mediators within the search process. Kuhlthau (2004) notes that students are more likely to consult friends, family, or fellow students than they are to call upon the services of a formal mediator. Understandably, Kuhlthau argues that this phenomenon is

due to weaknesses in mediation practices, a lack of marketing on the part of librarians, or both. However, studies such as Tsai's (2012) survey of undergraduate information seekers suggest that students actually find informal search mediators such as family and friends more helpful than formal mediators such as librarians. In addition, when Kuhlthau's work on mediation is considered in the light of work in the field of critical information literacy, it seems possible that her dichotomy of formal and informal mediators may not be a very useful tool for understanding what exactly happens in a search mediation encounter. For that reason, this study examines mediation encounters themselves as they organically occur, rather than sorting them into *a priori* categories based on whether or not a student's chosen mediator is an information expert such as a librarian.

After collecting, transcribing, and studying the data, I began a two-phase data analysis, following Stake's (2006) multiple case analysis process. In the first, case level phase, I considered each student's experiences in isolation. I identified and explored two to three key findings about that particular case, drawing from interview transcripts, participant drawings, observation field notes, and other documents. Chapter 4 presented the resulting case reports, alongside relevant contextual and observation data collected for the study. Chapter 5 summarized the second, cross-case analysis phase in which I examined all the cases alongside one another, looking for themes relevant to the research questions which were found in multiple cases. Based on this analysis I developed six cross-case assertions about information search mediation that held true for the participants in this study. In this sixth and final chapter of this study, I will recap the research problem and questions explored in this study, discuss my cross-case assertions about the research questions in the light of the ACRL Framework for Information

Literacy, explore their implications for theory, research, and paper, and propose potential lines of future research that build on this study.

Research Problem

As discussed above, scholars of information contend that information seekers' interactions with search mediators play an important role in overcoming the common experience of uncertainty and successfully navigating the information search process. However, students seem to consistently select and engage with mediators in ways that appear to experts to be relatively ineffective for learning how to navigate the information search process. This "perplexing and enigmatic state" of affairs (Clark, D. L, Guba, & Smith, 1977, p. 7) suggests that the current understanding of information seeking may not fully depict the aspects of search mediation that are actually the most important to students who are performing an information search.

For that reason, I conducted an in-depth study of students' experiences of search mediation encounters and their perceptions of the role of mediation encounters within the information search process as a whole. I speculated that the findings of this study might provide guidance for librarians, theorists and researchers attempting to understand how search mediation encounters help students navigate the thoughts, feelings, and actions of the information search process.

Research Questions

Based on the research problem and purpose, this study explored two main research questions:

1. What are the characteristics of information search mediation encounters as experienced by lower-division undergraduate students?

2. How do students use search mediation encounters to navigate the information search process?

Discussion of cross-case assertions

The six cross-case assertions that emerged from participants' lived experiences fell into three categories. The first two assertions related to the first research question; "What are the characteristics and contexts of information search mediation encounters as experienced by community college students?" The next three assertions shed light on the second question, "How do students use search mediation encounters to navigate the information search process?" The sixth and final assertion did not relate to a specific question, but instead provided a broader insight into the quintain, or topic of information search mediation.

The ACRL Framework as Theoretical Lens

This section consists of a brief discussion of each cross-case assertion in the light of one or more Threshold Concepts included in the (2015) ACRL Framework for Information Literacy. The concepts are listed in Table 2 below for the convenience of the reader. The fourth cross-case assertion, that "Mediation encounters vary widely depending on students' goals for an assignment", did not map well to any particular threshold concepts. However, it did have implications for the definition and broader discussion of information literacy as presented in the Framework document. Finally, the Threshold Concepts are ordered alphabetically in the Framework, and not numbered. However, I have assigned each a letter for ease in reading this section.

Threshold Concepts		Relevant Cross-case assertion(s)*
A	Authority Is Constructed and Contextual	2, 5, 6
B	Information Creation as a Process	3
C	Information Has Value	5
D	Research as Inquiry	3
E	Scholarship as Conversation	2, 3
F	Searching as Strategic Exploration	1, 6
* Assertion 4 did not map well to any specific concept(s), but is relevant to the Framework's definition and discussion of information literacy.		

Table 3: The ACRL Framework for Information Literacy Threshold Concepts mapped to relevant cross-case assertions

Assertions about Question 1

Assertion 1 (Selecting a Mediator): Information seekers selected mediators that they believed could address their needs. Participants in this study tended to have a strategy in mind when selecting mediators. The participants shared examples of selecting mediators to address one or several challenges related to the cognitive, emotional, or procedural aspects of their information searches. However, these students' choices of mediators were also influenced by the contexts in which their information searches took place; these contexts included not only the locations in which the searches occurred but also the mediators most easily available and the time left before a deadline. For instance, the UCC library didn't have access to the archived newspaper articles Kalik was seeking, so he turned to journalism professors who he thought could help him locate those resources. Hunter, who admitted that time management was not his strong suit, consulted his mother and his friend on *Second Life* in large part because they were available the

night before a deadline. Students' rationales for choosing mediators differed widely, and a few mediation encounters evolved out of conversations on other topics that organically shifted to information-seeking struggles. However, none described selecting a mediator at random. Librarians or professors might quibble over some of the choices of some of these students, but each student described consciously selecting specific people to help with particular information-seeking needs or roadblocks that he or she had encountered.

These students' behaviors when selecting search mediators seem to align quite closely with threshold concept F in the ACRL Framework, "Searching as Strategic Exploration" (2015). According to the Framework, information seekers who have mastered this concept are comfortable using a wide variety of search strategies and tools depending on which seem appropriate for a particular search. The participants in this study seem to be groping toward this ideal by strategically selecting mediators who will help them learn new skills or find resources they had not considered. Each student's strategy, or best path toward a goal, was influenced by different personal and contextual factors. These issues of mediator and source availability, time, and personal skills influenced the needs that participants identified, and in turn informed the paths the participants took toward completing their information searches.

However, when reading the Framework more closely in the light of these students' experiences, an interesting detail emerged. According to the description of the concept of "Searching as Strategic Exploration", "Learners who are developing their information literate abilities...seek guidance from experts, *such as librarians, researchers, and professionals*"(2015, italics mine). I found this comment troubling. Many students did consult people whom the ACRL Framework would consider "experts," but some did not.

More to the point, students described well-considered reasons for consulting people whom the Framework did not specifically list as experts, such as friends and family members. They also generally reported that the mediation encounters they had with informal mediators were helpful to their information-seeking process as a whole. This narrow definition of "experts" as the ideal search mediators in the ACRL Framework is certainly not the first time library theorists have attempted to privilege, by definition, certain types of mediators over others. However, the contrast between the "ideal behavior" described in the Framework and the choices made by the participants in this study speaks to a deeper tension between traditional models of information literacy and the new critical paradigm.

Assertion 2 (The Mediation Encounter): The ideal mediation encounter provided straightforward answers in a safe space. The students in this study, regardless of their ambitions as scholars, typically did not desire wide-ranging mediation encounters that delved deeply into theories of information seeking or source evaluation. Instead, they were focused on their assignments. Students were the most satisfied with encounters that gave them the answers to their questions as efficiently as possible, so they could move on to the next items on their to-do lists. Any additional insights a mediator might provide were seen as a bonus, but only if they turned out to be related to the issue at hand. In addition to this practical approach, students talked a great deal about the ways their most positive mediation encounters took place with people and in environments where they felt they could be vulnerable about their information-seeking uncertainties. Frank, Becky, and Gary shared evocative stories of mediation encounters with trusted

advisors who provided the reassurance they needed alongside search tips and subject matter knowledge.

As discussed, all participants not only asked others for help, but also mostly reported generally fruitful encounters. This theme suggests that the participants were cautiously beginning to embrace threshold concept E, "Scholarship as Conversation" (ACRL, 2015). According to this threshold concept, knowledge is created in conversation with other people knowledgeable in the subject under study. In addition, another threshold concept (A), "Authority is Constructed and Contextual", seemed to apply to this assertion. This concept defines authority as "a type of influence recognized or exerted within a community", and emphasizes that experts' perceptions of a topic's most authoritative sources and mediators can evolve over time. Although the threshold concept talks about information literate students coming to understand the weaknesses of "authoritative" sources, students in this study also seemed to be arriving at their own definitions of authority depending on their concerns and needs, in addition to or even in contradiction to the characteristics experts use to determine authority.

Students worried about selecting reliable and accurate sources, and used their mediation encounters to learn how to find information they thought they could trust. However, when it came to asking for help, students described engaging best with mediators who combined the type of authority they needed with a reassuring attitude and context that allowed them to feel safe. If scholarship is a conversation, then these students' experiences suggest that such a conversation can best take place in a context where information seekers feel secure enough to let down their guard and discuss both emerging ideas about their topics and challenges in information seeking.

Assertions about Question 2

Assertion 3 (The Search Process): Students typically used lessons learned via mediation to address perceived weaknesses in their information search abilities needed to complete their assigned information search. Each of the students in this study described putting the lessons learned in mediation encounters to work throughout the rest of the information seeking for their Composition II assignments. Even Kalik, who decided not to take the journalists' advice to contact the out-of-state newspapers for copies of old articles, used the information he learned from his mediators to develop a strategy that made sense for his information search and the context in which he was performing it. In contrast to Kalik's confidence, Gary needed the reassurance that he could perform information seeking on his own more than he needed any particular advice. After his supportive mediators pushed him out of the nest, he found that he indeed had developed the cognitive and procedural skills needed to search successfully, and his confidence grew with each success during his information search.

However, the data was somewhat mixed regarding the role of mediation in the cognitive realm of information seeking, in which students use the information they find and the people they consult with as tools for understanding their topics in greater depth. Frank, for example, made sense of their topics by bouncing ideas off of friends and fellow students at the coffee shop. He formed final conclusions based on a synthesis of a preliminary understanding of a topic and the feedback he received about his ideas from mediators. Eric, on the other hand, felt that he already had a good understanding of his topic at the outset of the information search and only used mediation in order to find supporting data that bolstered that pre-existing viewpoint. A third subset, represented by

Kaliq and Becky, needed to think through their topics on their own after consulting with mediators who helped with locating sources, in order to arrive at an understanding that was truly "theirs".

This assertion seems to resonate especially closely with the threshold concepts of "Information Creation as a Process" and "Research as Inquiry" (2015). The description of "Information Creation as a Process" elaborates that "novice learners begin to recognize the significance of the creation process, leading them to increasingly sophisticated choices when matching information products with their information needs" (2015). This can be seen with Kaliq, who used his mediation encounters with journalism professors to make a sophisticated cost-benefit analysis about the potential value of obtaining archived newspaper articles from the 1950s versus making do with what he had.

Upon considering these students' applications of their mediation encounters through the lens of the threshold concept of "Research as Inquiry", a more complicated relationship between assertion and threshold concept emerges. Although students described becoming more comfortable with the iterative and complex aspects of information seeking after consulting mediators, Eric described a search process that centered around using mediators to find supporting information to bolster the opinion he had at the start of his information-seeking process. In addition, the threshold concept of "Research as Inquiry", much like "Scholarship as Conversation" (Concept E), emphasizes the collaborative and interdependent nature of all information seeking and creation activities. However, with the notable exception of Frank, most students were focused on using their mediation encounters to become more independent and autonomous information seekers. Students like Becky and Kaliq, thought it was very important to

develop their ideas "on their own" as opposed to engaging with others to identify "points of disagreement where debate and dialogue work to deepen the conversations around knowledge" (2015). Although the behaviors they described or that I observed suggested a great deal of interdependence, these students seemed to perceive the need to ask for help as a weakness to be overcome, rather than as a conversation to be nurtured. This observation in turn may suggest that younger or less experienced students might struggle to absorb the threshold concept that scholarship, at all levels, is a conversation.

Assertion 4 (Presentation of Information): Mediation encounters varied widely depending on students' goals for an assignment. The students in this study described a wide variety of goals for their assignments. Several students, most notably Hunter, simply wanted to survive the assignment with a passing grade and move on to the next deadline. Others, like Kaliq, were very focused on their GPAs, and wanted strategies that would help them write the best papers possible in the time allowed. Finally, Frank, though motivated to get good grades, saw mediation encounters as means to his ultimate goal of becoming what he called an "educated person". As one might expect, these different goals led to different approaches in information seeking generally and search mediation specifically. The themes of convenience, usefulness, and exploration were featured in nearly all of the students' interviews, but the importance students placed on each of those three factors seemed to vary widely depending on that student's ultimate goal for his or her assignment.

In contrast, the theme of broad, unbounded exploration seems to infuse the ACRL Framework. Throughout the introduction of the Framework and many of the threshold concepts, the authors repeatedly describe information seeking as a process that

becomes more complex as an information seeker becomes more information literate, and defines information literacy itself as a means of "reflective discovery". The students in this study described encounters and experiences that made them think about their topics, information seeking, and information itself in more nuanced and complex ways, as I will explore in my discussion of the next cross-case assertion. However, none of the students described anything like the Framework's definition of information literacy as a goal, with the possible exception of Frank, who might have considered information literacy as described in the Framework to be an aspect of becoming an "educated person". Instead, most of these students seemed to use the information literacy concepts that they learned to be means to the ultimate end of a completed project and, hopefully, a good grade.

Assertion 5 (Future Information Seeking): Mediation encounters influenced information-seeking behaviors in future searches. That said, the influence of a search mediation encounter did not end when an assignment was turned in. All students described ways in which the knowledge they had gained through search mediation helped them in other assignments, and even in their daily lives. Some, like Becky, described using the procedural tricks they learned to become more independent information seekers. Others, like Danielle and Eric, used the lessons learned in mediation encounters to evaluate and use information more effectively in their everyday lives. Others, like Kaliq, Ana, and Gary, found that they had become skilled and confident enough in their information seeking to become search mediators in their own rights.

As I alluded to in my discussion of Assertions 3 and 4, after their search mediation encounters, the students in this study did seem to gain fuller understandings of many of the threshold concepts described in the Framework. However, threshold

concepts A and C, "Authority is Constructed and Contextual" and "Information has Value", seem particularly relevant to students' statements surrounding the ways their information-seeking habits changed in the wake of their Composition II search experiences. Danielle and Eric both gained a better understanding of the complex and contextual nature of authority through their mediation experiences. Danielle might never cite a YouTube video in a research assignment that called for peer reviewed journal articles, but she understood that they could be very helpful when the dishwasher broke down. More dramatically, Eric was beginning to "respect the expertise that authority represents while remaining skeptical of the systems that have elevated that authority and the information created by it" (ACRL, 2015), both in his scholarly work and in his life on social media.

Students in this study also took away the understanding that, as the Framework's threshold concept C states, "Information Has Value". Value is a broadly defined term in this threshold concept, meaning not just property value but also value as "a means of education, as a means to influence, and as a means of negotiating and understanding the world" (2015). Eric acted in his new respect for source authority described above by cleaning up his social media history, only including posts that he considered authoritative, and adding citations to song lyrics and other quotes he had posted. If "information has value", then Eric decided that he would only share the most valuable information on the topics he cared about with his friends. At a slightly different level, Ana and Gary both noted that they gained a great deal of satisfaction by becoming information literate enough to be able to share the valuable lessons they had learned about information seeking with others.

Cross-theme Assertion

Assertion 6 (cross-theme): Effective mediation encounters were those that focused on the seeker's needs. When the previously stated assertions related to the common themes of these students' experiences were considered as a whole, a sixth and final assertion emerged. In different ways and when discussing different aspects of the search experience, all of the students seemed to consider mediation encounters focused on their explicit and implicit needs to be the most useful and effective. Students talked repeatedly about encounters where mediators built rapport quickly, or built on a pre-existing relationship. The mediators who fared best in the students' descriptions of them were those who looked beyond the immediate question to the student's deeper goal or concern. One of the most memorable examples of this was Frank's niece, who knew him well enough to understand that his question about the themes of *Antigone* masked a deeper uncertainty about his ability to write a paper on such a challenging play. Instead of responding with the factual response he requested, she was able to provide the reassurance that he didn't consciously realize he needed.

The ACRL Framework for Information Literacy (2015), understandably, focuses on describing the mindset, actions, and key concepts involved in becoming an information literate person. It includes very few details that describe the attributes of mediators or mediation encounters that may more effectively help an emerging information seeker attain the threshold concepts described in the Framework. For that reason, it seemed appropriate to flip the theoretical lens, and explore what this final assertion about the students in the study implies about the aspects of the ACRL Framework that touch on search mediators.

The description of threshold concept A, "Authority is Constructed and Contextual", states in part that "Authority is constructed in that various communities may recognize different types of authority. It is contextual in that the information need may help to determine the level of authority required." It seems possible that this could hold true when considering the authority of search mediators as well as the authority of information found in the same source. When the students reached out for help while searching for information, they seldom chose to "seek guidance from experts, such as librarians, researchers, and professionals", as suggested as a metric of attainment of threshold concept F, "Searching as Strategic Exploration".

Instead, the students in this study typically preferred to talk to people who they not only thought had skills in the areas where they felt weak, but also with whom they already had an existing relationship of some sort. Even in the cases where the students in the study consulted mediators whom they did not previously know, it seemed as though a quick establishment of rapport and empathy was an important element of, and possibly a prerequisite for, a successful mediation encounter. Not only is this human aspect of the relationships involved in search mediation not considered in the ACRL Framework, it has received little attention in the literature of information seeking. However, based on the stories of these eight students and the assertions I developed about their information-seeking experiences, it may be impossible to understand how search mediation encounters work without attending to the complex and messy nature of the human relationships that are established before the start of mediation or even the information search process as a whole.

Gaining Perspective: A Symbolic Interactionist discussion of Information

Search Mediation

Upon taking a step back and considering all six cross-case assertions in the light of the ACRL Framework, a common theme starts to emerge. Simply put, no information seeker is an island, and information seeking appears to be an inherently social experience. The students in this study do not merely consult mediators to resolve simple knowledge gaps about their topic or search strategy in ways that can easily be assessed as helpful or not helpful. Participants also described deriving emotional support and reassurance about their information searches through these mediation encounters. They also used mediators as sounding boards to test and refine the ways they thought about the topic upon which they were gathering information.

Because I approached this study from a Symbolic Interactionist perspective, many aspects of the social nature of information seeking emerged from the data I gathered, and are worthy of further discussion in this chapter. The ACRL Framework touches lightly on the social aspect of information seeking in the threshold concept "Scholarship as Conversation". However, the ACRL task force designed the Framework to explore information seekers' relationships with information, not the other people who become mediators to their information-seeking experience. Although the framework clarifies the nature of the social aspects of information search mediation, it cannot tell us very much about what the characteristics of these mediation encounters might imply for theory, research, and practice. Certain additional findings emerged because my theoretical perspective and assumptions guiding my methodological choice was symbolic interactionism, and are worthy of brief discussion here.

As discussed in chapter 3, Blumer (1969) describes three central tenets of symbolic interactionism. First, he contends that "Human beings act toward things [e.g. the information search process] on the basis of the meanings that these things have for them" (p. 2). This seems to be true when considering Assertions 1 and 2 from the cross-case analysis, that information seekers selected mediators that they believed could address their needs, and that they preferred that these interactions take place in a safe space where they could be vulnerable enough to admit their knowledge gaps. Information seeking appears to be an emotionally and cognitively intimidating experience for students, as depicted in Kuhlthau's (2004) exploration of information search uncertainty. Librarians seeking to understand the dynamics of information search mediation should keep in mind that these encounters can be much more complex than a transactional reference desk interview or even a one-on-one research consultation.

Blumer's second tenet states that "the meaning of these things is derived from, and arises out of, the social interaction that one has with one's fellows" (1969, p. 2). Based on numerous studies (including this one), students seek mediation for their information seeking because of a sense of uncertainty. It seems possible that the past and present interactions that students have with the culture of higher education could spark this sense of uncertainty. There is evidence for this possibility within the narratives of the students in this study. For instance, Kaliq mentioned that his previous college experiences and feedback from instructors in the form of compliments and grades gave him the confidence to take more risks with search mediation, even to the point of reaching out to journalism professors to get expert guidance in accessing old, obscure newspaper articles. Experiences with classmates asking him for help, such as during the in-class peer review

exercise, may have strengthened this confidence. On the other side of the coin, Gary's experiences with more successful classmates and his struggles in numerous developmental classes before he even made it to Composition II seemed to lead him to the other extreme in his search mediation practices. He continued to turn to teachers and librarians for relatively minor concerns, even as they were reassuring him that he had the ability to handle basic information-seeking tasks on his own.

Finally, Blumer (1969) asserts "that these meanings are handled in, and modified through, an interpretive process used by the person in dealing with the things he encounters" (p. 2). When applied to the topic of search mediation, Blumer's third tenet suggests that students' understandings of the information search process, and by extension information literacy, develop through interaction with mediators as well as information sources. At this point, it seems appropriate to turn toward the definition of Information Literacy proposed in the ACRL (2015) Framework. As discussed above, the Framework defines Information Literacy 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" (p. 3). The Framework has quite a lot to say about students' interaction with the objects of information seeking, such as sources, search tools, and the tacit and implicit rules of proper information use in an academic context. However, it is far vaguer regarding the social interactions that are part and parcel of information seeking.

The most detailed discussion of social information seeking in the Framework comes in the discussion of threshold concept E, "Scholarship as Conversation". At first

glance, one might guess that this concept would address the ways in which students learn information seeking and information literacy skills through mediation encounters.

However, the explanation of the concept makes it clear that scholarship is a conversation into which a novice seeker must earn entry by gaining a rudimentary understanding of the field of inquiry. It does not explicitly address the kinds of conversations explored in this study, in which seekers participate in mediation encounters that ideally give them the cognitive, procedural, and emotional tools necessary to gain entry to what the framework defines as the true conversation of scholarship.

Worse yet, this lack of attention to the common, everyday search mediations in which seekers construct the foundation of their information literacy skills implies a hierarchy of sorts, which might in turn be communicated to students being taught the threshold concepts at the reference desk or in the classroom. New, uncertain seekers could well conclude that the questions that spark these crucial conversations are "stupid" and beneath the notice of librarians and instructors who have already gained entry to the conversation of scholarship. This implied barrier of entry to the conversation of scholarship could in turn lead students to perceive instructors and librarians as gatekeepers managing access to membership in an intellectual community, rather than guides along the path to greater knowledge and understanding. An exploration of this very tenuous and preliminary speculation is beyond the scope of this dissertation, but it seems very possible that a student's previous and current experiences with authorities and organizations within higher education could increase their uncertainty and vulnerability when it comes time to select a mediator. The data from this study also suggest that information search mediation provides the collaborative guidance and support that

empowers seekers to construct their own sense of information literacy. As information professionals who are inevitably part of Freire's (1971) banking model of education, it will take no small amount of creativity, patience, and humility to gain the theoretical, empirical, and practical knowledge needed to fruitfully engage in mediation encounters where appropriate, and to support students who decide to seek out help from others. However, if we want to strengthen both the information literacy skills of students and the position of the academic library as a central resource for student learning, it is time for instruction librarians and scholars of information literacy to turn their attention toward information search mediation in all its forms and contexts.

Implications of the Study

The cross-case assertions developed in this study have important implications for the theory, research, and practice of information literacy in academic librarianship. This section will explore these implications in greater depth. Theoretical implications include potential blind spots related to mediation encounters in the ACRL Framework for Information Literacy for Higher Education, as well as a possible new branch of inquiry for theorists engaged in the subfield of critical information literacy. In addition, the findings of this study suggest a need for a better empirical understanding of the elements that lead to successful mediation encounters. Practitioners may find these assertions to be important reminders that college students likely approach information seeking with different objectives than do the academic librarians who assist students in finding and evaluating the resources they need.

Implications for Theory

The final version of the ACRL Framework for Information Literacy in Higher Education was presented to the ACRL in January 2015, a few days before my proposal meeting. During my process of data gathering and analysis, I watched the early conversations and critiques of the Framework evolve. The key points of this debate are summarized in chapter 2. The findings of this study suggest weak points in the ACRL Framework as currently framed. As discussed in the previous section of this chapter, the Framework provides a narrower definition of search mediation "experts" than the diverse group of people the students of this study seemed to consult. On a related note, the participants in this study seemed to define "authority" even more loosely than the already somewhat broad definition in the Framework. Many students in this study also conceived of search mediation as a tool they would eventually outgrow on their path to becoming independent information seekers, rather than the eternal aspect of information literacy implied in the threshold concept "Scholarship as a Conversation". Similarly, no student described a concept like information literacy as an end goal, but rather as a means to passing a class, graduating, or becoming an educated person.

Ultimately, the main weakness of the Framework as it currently stands when considered in the light of my findings is its' near-total silence on the role of the messy, human process of search mediation in successful information seeking, and by extension, becoming information literate. These weaknesses and blind spots are not surprising in a document created by a committee of leading information literacy practitioners and researchers for the national professional organization of academic librarians with the goal of describe something like the platonic ideal of an information literate college student.

However, in my opinion the findings of this study suggest a possible avenue to further develop and strengthen the Framework as a theoretical, empirical and practical tool. Several threshold concepts in the Framework allude to the communal aspects of knowledge construction and evaluation. This in itself is an important step in grounding the concept of information literacy in a more constructivist stance than was the case with the 2000 Standards. However, when examining the Framework in more detail, particularly in the light of the experiences of students described in this study, a weakness seems to emerge.

The Framework posits that an information literate student is one who "can participate successfully in collaborative spaces" (2015, p. 1). The Framework's definition of information literacy also states that information literate individuals "participat[e] ethically in communities of learning" (p. 3). That said, the Framework in its current form does not describe the successful participation it posits in very much detail. The first threshold concept, "Authority Is Constructed and Contextual" simply states that learners who are becoming information literate "understand the increasingly social nature of the information ecosystem."(p. 6) The discussion of the threshold concept "Research as Inquiry" states that students who are becoming information literate have dispositions to "seek multiple perspectives during information gathering and assessment" and "seek appropriate help when needed" (p. 7), but provides little guidance as to what appropriate help might look like. The threshold concept "Scholarship as Conversation" suggests that information seekers "seek out conversations taking place in their research area"(p. 9). Perhaps the most problematic allusion to search mediation comes in the description of the dispositions of information seekers embracing the sixth threshold concept, "Searching as

Strategic Exploration." The Framework suggests that information literate learners focus on search mediation encounters with "experts, such as librarians, researchers, and professionals" (p. 9).

Simply put, the findings of this study imply that the Framework in its present form does not sufficiently grapple with the complex approaches that students take when incorporating search mediation into their information-seeking processes or the messy human-ness that embodies the search process. A cursory look at the stories of the students who participated in this study shows that strategic explorations of their topics often included conversations with classmates, friends, and relatives who helped them find information with confidence and competence. Even many "experts" who students consulted were not selected merely because of their expertise, but because previous interactions with them had proven them to be helpful and friendly as well as knowledgeable.

In my opinion, the findings of this study suggest that the ACRL Framework, although a useful lens for examining the phenomenon of information literacy, is an idealized, tidy model of information seeking that is far removed from the messy realities of the undergraduate information search process. Further, I contend that the sterilized nature of the Framework in its current form diminishes its usefulness for instruction librarians attempting to use the Framework to develop appropriate learning outcomes for their students. This potential deficiency in the Framework's conception of search mediation is not surprising in and of itself. The goal of the ACRL Framework was not to engage with or even describe information search mediation, but rather to develop a set of core ideas about information literacy that would influence academic librarians as they

developed information literacy learning outcomes and pedagogy (p. 1). However, the relatively vague and somewhat problematic depictions of information search mediation included in the Framework suggest the need for some sort of theoretical model that describes how and why search mediation helps information seekers. I concluded my discussion of this study's findings with a very brief exploration of my findings and the ACRL Framework through the lens of symbolic interactionism. My brief peek through this wider theoretical lens suggests that Blumer's (1969) model and theories created within the general perspective of Symbolic Interactionism could provide a route to a clearer theoretical understanding of the social aspects of information literacy than are currently found in the ACRL Framework.

2010-2011 ACRL President and information literacy scholar Lisa Janicke Hinchliffe (2001; 2004; Oakleaf and Hinchliffe, 2008; Farkas & Hinchliffe 2013; Farkas, Hinchliffe & Houk 2014) has spoken on the ACRL Framework and its implications at several recent conferences on information literacy, one of which (2015) I was privileged to attend. Among other topics, she noted that nothing in the Framework precluded the addition of new threshold concepts beyond those described in the initial Framework. I suggest that by making search mediation a more central part of the Information Literacy research agenda, theorists could develop one or more new threshold concepts dealing with mediation. The existing concept that "Scholarship is a Conversation" is a good start, but I believe that more research needs to be done in order to understand the interactions that take place in these conversations. If scholars and practitioners continue to treat the Framework as a living, evolving document, rather than as a fixed list in the way that the 2000 Standards were understood, the Framework could grow into a robust, flexible

theoretical foundation for information literacy as a conceptual phenomenon, a curriculum for instruction librarians, and a topic for further empirical research.

Implications for Research

The literature of information literacy has attempted to describe information seeking in a series of increasingly complex and nuanced models, culminating in Kuhlthau's (1991, 2004) Information Search Process. As discussed briefly in chapter 2, Kuhlthau attempted to craft a similar model of the ideal search mediation system for librarians to follow. However, as was also discussed, Kuhlthau's model of information seeking has enjoyed much more acceptance and successful use in the field than has her model of search mediation. Early assumptions that the underuse of formal mediators was due to poor information literacy instruction or poor marketing eventually gave way to more nuanced arguments of critical information literacy theorists. Scholars such as Elmborg (2006, 2010) and Olson-Kopp and Kopp (2010) contended that librarians needed to engage students' viewpoints more fully by embracing problem-posing information literacy pedagogies.

However, after attending to the voices and perspectives of the students in this study, it seems as though the real dynamics at play in search mediation encounters may be more complex than either side yet understands. Although an attempt to build a model of search mediation is beyond the scope of this study, the experiences of the students in this study suggest potential factors in mediation encounters that seekers would consider successful. It seems unlikely that the complex human interactions between searchers and mediators could be described in anything resembling the relatively linear process models that have been used to make sense of information seeking. That said, it does seem

possible that researchers could learn more about the phenomenon of search mediation by exploring the broad assertions developed in this study in greater detail.

For instance, researchers could examine the typical information needs that inspire particular types of students to consult mediators. They could also consider whether mediators considered successful by information seekers tend toward particular behaviors that may help them establish the rapport with information seekers that may be integral to successful mediation encounters. Researchers may never be able to turn these complex and often emotionally charged encounters into a tidy model like Kuhlthau's Information Search Process or the ACRL Framework. However, they could possibly identify common themes of successful mediation encounters that academic librarians could keep in mind at the reference desk and when teaching students how best to consult with people, as well as sources, in their information search processes.

Implications for Practice

The assertions resulting from this study suggest that students approach information seeking in different ways than do "experts, such as librarians, researchers, and professionals" (ACRL, p. 9). For instance, finding information is the end goal of a librarian in a reference interview, and most scholars and faculty members also see the generation of new knowledge by their students or in their field of study as an end in itself. However, with rare exceptions, the students in this study seemed to value the information found during information seeking as a means to another end, which could be turning in a passing paper on time, creating an assignment that would earn a good grade, or completing one more step toward the ultimate goal of graduating with a degree that would help them in their personal and career goals.

This difference in outlook suggests that lower-division undergraduates may understand and use mediation encounters very differently than do professional information seekers such as librarians and faculty members. However, the students in students do not simply consult the mediators that they do out of convenience, they choose those mediators because they have a trusting relationship with that mediator. One of the most evocative examples of this type of relationship is Becky's dependence on Kevin, an IT help desk staff member at the Forum. Other people probably could have helped her with her problems and road blocks. However, Becky knew she could trust Kevin to both know the answers and be helpful. Because of the strength of that bond, she felt that until she became what she called an independent information seeker, she would only be able to work on her project when he was working the help desk.

This study was an attempt to step outside the standpoint of an instruction librarian and higher education doctoral student, and to gain a clearer understanding of what the search mediation experience is like for students who are still grappling with the basic skills of information seeking and information literacy. All of the stories in this study indicated that relationships of trust formed either before the search or in its early stages were key to a mediation encounter that a student would consider a success. It might be possible that information search uncertainty causes students to have metaphorical "blindness" in regards to trying other mediators when their preferred options are not available. However, the situation may be more complex than that. The students in this study all described highly complex lives in which they juggled school, work, family commitments, and other community involvement. During an information search where every moment counted, it could make sense to a student to stick with tried and true

solutions instead of taking a risk, much as Kaliq rejected the journalism professors' advice in favor of a solution that would be good enough.

Whether either or both of these motivations are at play in students' choices of information search mediators, I contend that the findings of this study suggest the need for a more explicitly empathetic approach to information search mediation. At their best, librarians combine information seeking expertise with a friendly demeanor and welcoming environment. However, the findings of this study imply that practitioners also need to focus more on building trusting relationships with students before they are needed. This could be accomplished through increased outreach and embedded librarian services, and simply by being more visible around campus. Such personal connections could lead those information seekers and the other students who consult them to see librarians as mediators who are both knowledgeable and supportive. By doing so, students may well find it easier to become vulnerable enough to admit their perceived weaknesses or confusion to information seeking "experts".

That said, students will probably never only or even primarily consult librarians when needing help with information seeking. Traditional means of student outreach such as instruction sessions, reference services, programming, participation in campus events, and marketing campaigns will continue to play an important role in educating students about librarians' skills as search mediators, and to allow students opportunities to build friendly relationships with librarians before being thrust into an information search. In addition, many students in this study seemed to develop trusting relationships with one or more of their instructors. Instruction librarians could extend their outreach to those faculty members, training them in the best practices of information search mediation.

However, librarians may also need to accept the reality that students will and perhaps should consult trusted mediators who are not librarians, instructors, or subject matter experts. Librarians can then begin to develop new instruction approaches that give students the tools needed to determine how to select beneficial search mediators, and even become mentors to non-librarian search mediators in much the same way that they have traditionally served information seekers.

Librarians interested in taking this type of integrated approach to information literacy could improve outreach to and communication with both faculty members and student support services such as the writing center, disability services, tutoring services, distance learning services, and other relevant departments. They would also need to educate administrators on the merits of this integrated approach to information literacy. By training likely mediators as well as students in concepts of information literacy, academic librarians could take on an expanded, consultative role outside the library building. Ultimately, this process could expand the library's visibility, strengthen its campus-wide relevance, and ultimately integrate concepts of information literacy throughout all aspects of teaching and learning. In the Future Research section of this chapter, I will propose three possible lines of research that could help identify and clarify best practices for both search mediators and the information seekers who consult them. However, first I will turn to the limitations of this study, some of which highlight the need for further research on my tentative assertions.

Limitations of the Study

The results of this or any qualitative case study will not provide as many transferable themes to researchers and practitioners as other types of qualitative and

quantitative work (Creswell, 2007, 2009) simply due to its tightly delimited context. The intent, however, was to identify new perspectives on mediation encounters, a relatively unexplored phenomenon. The assertions that resulted from this study may be fruitfully further explored in larger-scale qualitative and quantitative research.

As Patton notes in his seminal (2004) text on qualitative analysis, “the validity, meaningfulness, and insights generated from qualitative inquiry have more to do with the information richness of the cases selected and the observational and analytical capabilities of the researcher than with sample size” (p. 245). Although as broad a representation of students as possible were selected for this study, true diversity was limited both by the fact that cases were selected from one institution (albeit from different campuses) and because the participants who volunteered for the study might not have had experiences that are typical of undergraduates in general. Likewise, the study site was a community college in an urban area in the southern United States. It seems possible that the information-seeking habits of community college students may not be transferable to other types of undergraduate information seekers. In addition, students hailing from different regions of the country may select or interact with search mediators in different ways based on local culture and customs.

As Patton (2004) observes, all qualitative research is limited by the strengths and weaknesses of the research instrument; in other words, the researcher herself. As an academic librarian, I brought knowledge of the theory and practice of information literacy pedagogy and formal search mediation to this study. However, I also approached the study as a skilled information seeker and formal mediator whose experiences and viewpoint are likely very different from those of the information seekers who took part in

the study. Finally, although observation was a method used in this study, the use of interviews required dependence upon the self-reporting of the students. It is possible that students may have described their mediation encounters and information searches in ways they thought might be more pleasing to me, rather than in the ways they actually perceived them.

Future Research

Upon consideration of the current state of literature and the findings of this study, I suggest three possible avenues for future research on search mediation. The first focuses on the role of social networks in community college success. The second is a qualitative grounded-theory study that would attempt to identify the contextual and emotional elements common to successful search mediators and mediation encounters, and to describe the interplay between them. Finally, it seems possible that, after more qualitative research into the phenomenon of information search mediation, a quantitative study could be constructed that would attempt to construct a multiple regression model of the variables that affect student satisfaction with search mediation encounters.

As discussed briefly in chapter 3, community colleges are increasingly important institutions for the success of first-generation, nontraditional, and other at-risk college students. In addition, studies by Becker (2009) and Patterson (2009) suggest that community college students may face special challenges in information seeking, and also receive mixed messages about issues such as the role of authority in evaluating sources. However, when considering the findings of this study in the light of studies on community college student success, such as Karp and Hughes' (2008) examination of the academic and social integration of community college students, it may be that community

college students use their social networks differently than other types of undergraduates when considering who and how to ask for help with information seeking. A study comparing the types of mediation encounters experienced by students at different types of Carnegie institutions could provide insights that would allow librarians to better serve the needs of their specific student populations.

A second potential line of inquiry concerns the weak theoretical conception of search mediation as described in the section on this study's implications. This study provides compelling evidence that students can gain important cognitive, procedural, and emotional support from search mediation encounters. However, this study provides relatively little insight into how such encounters work. In addition, the assertions supported by the relatively small and homogeneous number of cases are both tentative and relatively simple. It seems possible, however, that this research could serve as the jumping-off point for a larger-scale grounded theory study that would attempt to develop a model of the factors and contexts of importance in a search mediation encounter. Such a study might follow the Strauss and Corbin (1990, 1998) methodology, and incorporate interviews with a larger number of students and mediators as well as observations of mediation encounters as they play out in real time.

A third, quantitative study could be conducted alongside the grounded theory project described above as the second half of a mixed-methods study, or could stand on its own. Rather than focusing solely on satisfaction by mediator "type" (librarian, faculty member, classmate, friend, etc.), as Tsai (2012) did in her examination of students' levels of satisfaction with various types of mediators, students could rate the importance of various aspects of a search mediation encounter in determining how helpful it was to

them. Such a study could attempt to construct a multiple-regression model of information search mediation encounters, incorporating variables such as behaviors, confidence levels, and information literacy skills of both information seekers and the mediators they consult. Such a model, while objective and simplistic by its very nature, could provide a different perspective on understanding the key variables involved in successful search mediation encounters, and by extension successful information searches.

Conclusion and Final Reflection

As I close this dissertation, it seems appropriate to return to the participant in my pilot study (S. Clark, 2014) who was an early inspiration for this project. "Ashley" was a struggling social work student who was reluctant to ask librarians or instructors for help with her information seeking. She seemed to have bad luck when she did consult the formal mediators whom Kuhlthau and the ACRL Framework would describe as ideal. Her boyfriend provided her invaluable help in developing her ideas and finding some information, but his knowledge was ultimately too limited to help her find the scholarly sources required for her assignments. Because Ashley was unable to find the courage to ask other people for help with her information seeking, she was unable to write the papers required for her course. Based on the insights I gained from this dissertation study, I wonder what I would tell her today if we were back at the coffee shop near her campus discussing information seeking. I think I might say something like this:

The most important thing to do is reach out to people who you think have the skills you need, whether that person is a librarian or someone else. Ask for help, and when you find someone who seems kind, and who seems like they will listen, share your problem. Don't be ashamed, and don't be afraid. In talking to students

in my research, I've learned that most people who can help you will help you to the best of their ability. Once you've talked to them, you will understand how the advice and support they shared might or might not help you find the information you need, both for this project and for others. And in time, when classmates or friends ask you for help with their information seeking, you may be able to pass on what you've learned, because you considered your needs, took a risk, and reached out for guidance.

All that said, this dissertation has mostly served as documentation of just how little academic librarians and information scholars know about the topic of information search mediation. My hope is that this study will serve as an early step on the journey to a fuller understanding of common traits of successful search mediation encounters. Such an understanding could eventually lead to a set of best practices that will help academic librarians guide information seekers to the sources that best meet all their needs, and to teach those seekers the skills they can use to help their classmates, family, and friends find and critically engage with information in all aspects of their lives.

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APPENDICES

APPENDIX A

RECRUITMENT COMMUNICATIONS

Note: The following text will be read aloud at in-class recruitment efforts, and a print copy will be distributed to students.

Subject Line (if applicable): Research on finding information for Comp 2 research papers

Hello Comp 2 students,

My name is Sarah Clark, and I am a college librarian and a PhD student. I am studying the ways that students like you find sources for your assignments, and particularly what happens when you ask librarians, friends, or family for help. I hope to use what I learn to help teachers and librarians learn how to more effectively help you learn how to find information for college research assignments, and for information needs after you graduate. I'll be hanging around in the back of the classroom and in the library for the next few weeks to observe what goes on, but I need some extra help from some of you.

Would you be willing to share your experiences this semester? Your participation would include a one-hour informal interview discussing your information search experiences. I'd also like a copy of your final paper, and any notes you've taken while researching and writing the paper. If anything needs to be photocopied, don't worry, I'll cover that expense. Also, your choice to participate or not to participate will have no bearing on your grade in this class.

I take your confidentiality very seriously. Nobody, not even your instructor, will know the names of the people interviewed for this study. Details about the precautions I will take will be fully explained to you when we meet.

Each participant will receive a \$10 bookstore gift card as a thank you. If you are willing to participate in this project, please reply to this email/sign the sheet going around the room/talk to me after class. I'll be scheduling interviews for the week after the major class paper is due.

Thanks,

Sarah Clark
(contact info removed)

APPENDIX B

IRB APPROVAL LETTERS AND CONSENT FORM

**Oklahoma State University Institutional Review
Board**

Date: Tuesday, March 03, 2015
IRB Application No: ED1518
Proposal Title: On the Other Side of the Reference Desk: Exploring Undergraduates'
Information Search Mediation Experiences

Reviewed and Processed as: Exempt

Approval Status: Conditionally Approved

Principal Investigator(s):

Sarah Clark	Kerri Shutz Kearney
8455 Overlook Trail	315 Willard
Claremore, OK 74019	Stillwater, OK 74078

The research procedures of the IRB application referenced above have been reviewed by the IRB and are conditionally approved pending receipt of documentation of approval from Tulsa Community College IRB. Once this documentation is received, full approval will be granted and a letter sent to the PI(s). No research activities involving human subjects can begin prior to receipt of final approval.

Sincerely,



Hugh Crethar, Chair, Institutional Review Board



**Tulsa Community College
Institutional Review Board
Decision Notification**

Date: April 7, 2015

IRB#: IRB-150309

Project Title: On the Other Side of the Reference Desk: Exploring Undergraduates' Information Search Mediation Experiences.

Principal Investigator: Sarah Clark

Your research proposal has been approved by the Institutional Review Board at Tulsa Community College. You are authorized to begin your research under the auspices of TCC's IRB on the start date listed on your application or the date of this communication, if your proposed start date has passed. Your project approval is valid until the end date listed on your application or for one year after the approval of your study, whichever is earlier. After this approval period, you will be required to submit a continuation or renewal request for board approval, if you wish to continue your research project. This project has been approved as described in the IRB application. Any changes to the research project, such as the use of additional questionnaires or data, will need to be approved by the IRB. Please contact us if you have any questions regarding your IRB approval. We wish you luck in your research.

Sincerely,

Drs. Kevin David and Connie Hébert
Co-Chairs, Institutional Review Board

ADULT CONSENT FORM

OKLAHOMA STATE UNIVERSITY

PROJECT TITLE: ON THE OTHER SIDE OF THE REFERENCE DESK:
EXPLORING UNDERGRADUATES' INFORMATION SEARCH MEDIATION
EXPERIENCES

INVESTIGATORS: Sarah Clark, MLIS, Oklahoma State University, Kerri Kearney,
Ed.D, Oklahoma State University

PURPOSE: The purpose of the research study is to explore students' thoughts, feelings, and actions as they engage in and reflect on their information search mediation encounters over the course of the information search process. You must be 18 years or older to participate. You are being asked to participate because you are a student who will be researching and writing a paper over the course of this semester. I am seeking to understand your research and writing processes, experiences with people you ask for help when seeking information, and other events and emotions related to the paper-writing process.

PROCEDURES

Participation in this research will involve one meeting scheduled soon after the completion of your main research paper for the semester. We will discuss your experiences seeking information for and writing your research paper, with particular emphasis on your encounters with people whom you asked for help during your information search. The meeting will last 45- 60 minutes, and take place at a location and time that is convenient to both of us. Our meeting will consist of an interview lasting approximately 30 minutes, a drawing exercise, and a brief discussion of your drawing. Interviews will be audio recorded and transcribed by myself, and the transcripts will be provided to you for review.

RISKS OF PARTICIPATION:

There are no known risks associated with this project which are greater than those ordinarily encountered in daily life.

BENEFITS OF PARTICIPATION:

You may gain an appreciation and understanding of how original scholarly research is conducted. In addition, by thinking about and discussing your experience of researching and writing your assigned paper, you may gain new insights that will help you with future information seeking projects. This study may also help librarians and instructors design better instruction and library services for undergraduates. If you are interested, we will send you a copy of the results of the study when it is finished.

CONFIDENTIALITY:

The records of this study will be kept private. The data will be stored on an encrypted USB drive for the duration of this study and any other projects that might draw from

these interviews. The main foreseeable risk to your confidentiality would be gaining access to the encrypted data on the USB drive, which will be stored in a locked cabinet to minimize the risk of loss or theft. Any written results will not include information that will identify you. You will be identified in the study with a pseudonym, and possibly identifying data will be changed or not quoted in the study. Research records will be stored securely and only researchers and individuals responsible for research oversight will have access to the records. It is possible that the consent process and data collection will be observed by research oversight staff responsible for safeguarding the rights and wellbeing of people who participate in research.

COMPENSATION:

You will receive a \$10 gift card to the campus bookstore when we meet for our first interview.

CONTACTS :

You may contact the researcher and her advisor at the following phone numbers, should you desire to discuss your participation in the study and/or request information about the results of the study: [Sarah Clark, MLIS., 918-352-0883](tel:918-352-0883) or sarah.clark10@okstate.edu , and my advisor [Kerri Kearney, Ed.D, 405-513-2043](tel:405-513-2043) or kerri.kearney@okstate.edu. If you have questions about your rights as a research volunteer, you may contact Dr. Shelia Kennison, IRB Chair, 219 Cordell North, Stillwater, OK 74078, 405-744-3377 or irb@okstate.edu

PARTICIPANT RIGHTS:

I understand that my participation is voluntary, that there is no penalty for refusal to participate, and that I am free to withdraw my consent and participation in this project at any time, without penalty.

CONSENT DOCUMENTATION:

I have been fully informed about the procedures listed here. I am aware of what I will be asked to do and of the benefits of my participation. I also understand the following statements:

I affirm that I am 18 years of age or older.

I have read and fully understand this consent form. I sign it freely and voluntarily. A copy of this form will be given to me. I hereby give permission for my participation in this study.

Signature of Participant

Date

I certify that I have personally explained this document before requesting that the participant sign it.

Signature of Researcher

Date

APPENDIX C

DEMOGRAPHIC PROFILE

Please list the following characteristics about yourself:

1. Gender_____
2. Ethnicity (if more than one, list all) _____
3. Age_____
4. Main campus where you take your classes: _____
5. Degree/certificate program:_____
6. Number of hours completed:_____
7. How many times have you tried to take comp 2 (including this one)?_____
8. What are your plans after graduating from [college name]? _____

9. Are you the first member of your family to go to college? _____
10. If not, what other members of your family (Parents, siblings, children, current or former spouses/partners) have gone to college before you?

11. Do you work in addition to going to school? If so, how many hours a week? _____

APPENDIX D

INTERVIEW GUIDE

1. Tell me about the assignments that you had in comp 2 that required you to find sources from the library.
2. Describe how you went about gathering information for the assignment and writing the paper.
3. Tell me about the people you talked to or asked for help while working on this assignment.

For Each Person asked:

4. How did you go about asking (person) for help?
5. What happened when you asked (person) for help?
6. What new thoughts, skills, or attitudes about information seeking did you come away with from your encounter(s), if anything?
7. Why did you decide to ask (or to not ask) people for help?
8. In what ways did the things you learned from the people you asked for help change how you went about searching for information and writing your paper?
9. Have you ever had any experiences where someone asked you for help in finding information? If so, what happened?

10. Knowing what you know now, what do you think you might do differently the next time you have to write a research assignment?

10. Is there anything you'd like to add or clarify about your experience?

APPENDIX E

INSTRUCTIONS FOR DRAWING EXERCISE

After the interview, each participant will be provided one piece of white, 8 ½ x 11” paper, as well as a set of colored markers or crayons. Give the participant some space and do not engage with him or her while drawing but remain nearby in case he or she has questions.

The following instructions will be given verbally:

“Take the next 10 to 15 minutes to draw a picture or series of pictures that describe what searching for information for an assignment is like for you. Particularly include the things or people that make information seeking easier or harder. Try not to use words or other symbols of language. You are not going to be evaluated on your artistic ability or the colors that you choose. Stick figures, for example, are fine.”

After the drawing is done:

- 1) Ask participant to explain/interpret his/her drawing.
- 2) Based upon the participant's comments, respond with probing or follow up questions.

APPENDIX F

TEMPLATE FOR OBSERVATION FIELDNOTES

Date and Time:

Location:

Session Jottings page #s:

- I. Outline of key events and details
- II. Sensory Impressions
- III. Personal Responses
- IV. noteworthy scenes, words, phrases, and conversations
- V. Preliminary analysis
- VI. Questions for follow-up

Outline for fieldnotes adapted from *Writing Ethnographic Fieldnotes* by Emerson, Fretz and Shaw (1995, pp 68-99) and *FieldWorking: Reading and Writing Research* by Chiseri-Strater and Sunstein (1997, p. 73).

APPENDIX G

CASE REPORT SUMMARY FOR CROSS-CASE ANALYSIS

Case #:

Name:

Synopsis of Case:

Uniqueness of case situation for phenomenon:

Relevance of case for cross-case themes (High, Med, or Low):

Theme 1:

Theme 2:

Theme 3:

Theme 4:

Case Findings:

1.

2.

3.

4.

Possible Excerpts for Multicase Report (including page #s)

Commentary on case:

Outline for Case Report Summary adapted from reproducible worksheets developed by

Robert Stake as a companion to *Multiple Case Study Analysis* (2006), accessed at

<http://education.illinois.edu/circe/EDPSY490E/worksheets/worksheet.html>

APPENDIX H

Estimates of Ordinariness of the Situation of Each Case and

Estimates of Manifestation of Multicase Themes in Each Case

W = highly unusual situation, u = somewhat unusual situation, blank = ordinary situation

M = high manifestation, m = some manifestation, blank = almost no manifestation

	Case A	Case B	Case C	Case D
Ordinariness of this Case's situation:				
Original Multicase Themes				
Theme 1				
Theme 2				
Theme 3				
Theme 4				
Theme 5				
Theme 6				
Added Multicase Themes				
Theme 7				
Theme 8				

High manifestation means that the Theme is prominent in this particular case study. A highly unusual situation (far from ordinary) is one that is expected to challenge the generality of themes. As indicated, the original themes can be augmented by additional themes even as late as the beginning of the cross-case analysis. The paragraphs on each Theme should be attached to the matrix so that the basis for estimates can be readily examined.

Template for worksheet adapted from reproducible worksheets developed by Robert

Stake as a companion to *Multiple Case Study Analysis* (2006), accessed at

<http://education.illinois.edu/circe/EDPSY490E/worksheets/worksheet.html>

APPENDIX I

ESTIMATES OF FINDINGS' RELEVANCE TO THEMES

Case A	Themes							
	1	2	3	4	5	6	7	8
Finding I								
Finding II								
Finding III								
Finding IV								
Case B								
Finding I								
Finding II								
Finding III								
Case C								
Finding I								
Finding II								
Finding III								
Finding IV								
Finding V								
And so on for the remaining Cases								

A High mark means that the Theme is an important part of this particular case study and relevant to the theme.

Template for worksheet adapted from reproducible worksheets developed by Robert

Stake as a companion to *Multiple Case Study Analysis* (2006), accessed at

<http://education.illinois.edu/circe/EDPSY490E/worksheets/worksheet.html>

VITA

Sarah Clark

Candidate for the Degree of

Doctor of Philosophy

Thesis: ON THE OTHER SIDE OF THE REFERENCE DESK: EXPLORING
UNDERGRADUATES' INFORMATION SEARCH MEDIATION
EXPERIENCES THROUGH THE ACRL FRAMEWORK

Major Field: Educational Leadership & Policy Studies

Education:

Completed the requirements for the Doctor of Philosophy in Educational
Leadership & Policy Studies: Higher Education at Oklahoma State University,
Stillwater, Oklahoma in May, 2016.

Completed the requirements for the Master of Library and Information Studies
at the University of Oklahoma, Norman, Oklahoma in 2006.

Completed the requirements for the Bachelor of Arts in Letters at the University
of Oklahoma, Norman, Oklahoma in 1999.

Experience:

Rogers State University, Claremore, OK

Associate Library Director: July 2012-Present

Access Services and Distance Learning Librarian: May 2006-July 2012

Library Assistant: February 2005-May 2006

Beryl Ford Collection, Tulsa, OK

Volunteer intern, Archives

Professional Memberships:

Oklahoma Association of College and Research Librarians (OK-ACRL): 2015
President-Elect, 2016 President

OK-ACRL Community of Oklahoma Instructional Librarians (COIL): 2008-9
Secretary, 2009 Chair-elect, 2010 Chair, 2011 Immediate Past Chair.

Oklahoma Library Association (OLA) University & College Division: 2009-10
Chair-elect, 2010-11 Chair, 2011-12 Immediate Past Chair