From Intention to Composition: How Seminarians Conceptualize Research

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ABSTRACT: Using interactive qualitative analysis, this study explored how students at one mainline seminary conceptualized their process of writing research papers. The research questions were [1] What themes do seminary students use to describe their research process? [2] How do seminary students relate these themes into a system of thought (mindmap)? [3] How do seminary students decide to stop gathering information during their research process? [4] How are other people involved, if at all, in the information gathering that students do? Based on group and individual interviews, the authors identified six themes of doing research. The process included self-care, a preparation phase, information gathering, managing time, writing a draft, and revising. The aspects of the process that influenced most others were self-care and time management. The most common reasons reported for ending research were having enough information to complete the assignment and time constraints. Participants reported that they sometimes consulted professors and classmates as well as librarians when they gathered information. Students conceptualized the research process as a flow of influence that starts with intending, includes gathering information, and culminates in composing a product. Findings of the study support the continued need for building local collections, information literacy training, and the desirability of breaking the standard research assignment into a series of logically connected staged assignments. The authors propose a model of faculty-librarian collaboration in which librarians serve as research mentors.

INTRODUCTION

Theological libraries typically have students and faculty members as their primary users. Such libraries understand their principal mission as meeting information needs related to degree programs and research.[1] However, few empirical studies have reported on the information-seeking behavior or mindset of students in the context of graduate theological education. This study intends to gain increased understanding of how master's-level students studying theology discover and use information sources as they conduct research.

Learning more about how seminary students understand the information-seeking and research process will directly benefit two audiences. First, increased understanding of the student research process will benefit theological librarians, who shape onsite collections, provide access to digital information sources, and provide information literacy training to students. In the current environment stressing accountability for education at all levels, it is not enough for librarians to see the work of theological libraries as serving "intrinsic values and goods."[2] Rather, librarians

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[1] To be sure, some libraries may also value service to other user groups. Hook helpfully reminds librarians that a particular library's mission is always "dependent upon and derived from the mission, goals, and resources of the institution in which the library exists." William J. Hook, "Effective Leadership in Tough Times: Three Essays: Essay 1: Governance," *Theological Librarianship* 2, no. 1 (June 2009): 20.

[2] Ibid.

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are expected to be part of school-wide efforts to improve student learning.[3] Second, increased understanding will help professors, who create assignments for students. Faculty members want students to learn—and write interesting papers for professors to read. Because all theological schools work with finite resources, knowing how students think about the research process and use resources will help librarians and school leaders to be better stewards.[4]

This study focused on students in two degree programs, the Master of Arts (Theological Studies) and Master of Divinity, at one Protestant theological school, pseudonymously called Ulrich Zwingli Theological Seminary (UZTS). Researchers employed qualitative methods to examine how students themselves understood what they do when required to complete a major research project.[5] This report has six main parts. We first briefly review pertinent empirical literature about seminary student information behavior in conducting research. Second, we describe the study's research questions, methods, and research site. Third, we present the study's results using selected quotations from participants and as a group mindmap. Fourth, we then put the results in conversation with the published literature, specifically with Kuhlthau's theory of the information search process.[6] Fifth, we point out opportunities for further research about how seminary students conduct research. Finally, this report suggests how theological librarians might change their work to accommodate the actual way in which students think about the research process.

1. Literature Review: How Theological Students Seek Information

Few published studies address the information-gathering behaviors of divinity school or seminary students, despite Christine Wenderoth's 2008 call for librarians working in theological libraries

> to learn how our students and faculty actually pursue their work, how they actually understand and do research, how they actually read, how they actually write. We need to get beyond anecdotes and inferences to a real, serious, wide and deep study of contemporary research behaviors in the theological community. And we then need to look at how these behaviors hook up (or not) with our libraries.[7]

Penner's recent review of the information behavior of theologians cast a wide net "because only a few studies were found that concerned themselves with theologians, and literature in this area is quite scarce."[8] Based on bibliographic searches in several databases,[9] the authors found six twenty-first century research reports that directly focus on students pursing the work of information gathering in order to write a paper or deliver a presentation.

Brunton[10] studied the information behavior of students at Brisbane College of Theology based on Briggs'[11] 3P model which argues that learning and teaching occur in three stages: pre-stage (antecedents of learning), process

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[3]   The standards of the Association of Theological Schools in the United States and Canada, for instance, call for theological schools to engage in comprehensive programs of institutional effectiveness (General Standard 1.2.2) and for libraries of such schools to evaluate collections, usage patterns, services, and staff (5.4.3).

[4]   Timothy D. Lincoln, "Stewardship in Education: A World-Bridging Concept," *Theological Education* 43, no. 2 (2008): 1-10.

[5]   The authors gratefully acknowledge the financial support for this study provided by the Publications Committee of the American Theological Library Association.

[6]   Carol Kuhlthau, *Seeking Meaning: A Process Approach to Library and Information Services*, 2nd ed. (Westport, CT: Libraries Unlimited, 2004).

[7]   Christine Wenderoth, "Research Behaviors of Theological Educators," *Currents in Theology and Mission* 35, no. 4 (August 2008): 288.

[8]   Katharina Penner, "Information Behavior of Theologians: A Literature Review," *Theological Librarianship* 2 no. 1 (June 2009): 67.

[9]   EBSCO's Academic Search Complete, ERIC, ATLA Religion Database, Library and Information Abstracts, and Library Literature & Information Science Full Text.

[10] Christine Brunton, "The Effects of Library User-Education Programmes on the Information-Seeking Behavior of Brisbane College of Theology Students: An Australian Case Study," *Journal of Religious & Theological Information* 7, no. 2 (2005): 55-73.

[11] John B. Briggs, *Teaching for Quality Learning at University* (Buckingham, UK: Open University Press, 1999).

(learning activities), and product (the outcomes of learning). Brunton sought to learn more about the effectiveness of user training programs. She interviewed six students at the college to gain first-hand descriptions of student perceptions of information seeking. She concluded that students who partnered with librarians and who attended user training employed more effective search strategies and managed their time better than others.

Heinström[12] studied the patterns of information seeking of students writing master's theses at Åbo Akademi University (Finland). She was attempting to discover, among other research questions, if "patterns of information behavior can be explained by discipline differences."[13] Her respondents included four students in theology. She found that there was a significant connection between discipline and students who adopted a broad scanning model of information seeking (i.e., they searched widely in many different kind of sources). However, she concluded that the personality of students was more influential on their information-seeking behavior than their specific discipline.

Milas[14] studied the information behavior of Harvard University students enrolled in Doctor of Theology and Doctor of Philosophy programs, a professional and an academic degree, respectively. He based his research in Dervin's[15] theory of sense-making. Milas found that Ph.D. students acknowledged assistance from academic librarians in their dissertations more than Th.D. students and that Th.D. students acknowledged assistance from clergy more than Ph.D. students did.

Gaba[16] is currently studying the research process of MDiv students at theological schools in the Chicago area. She is focusing on specific academic tasks rather than assuming that library use is inherently valuable. Her study conducts group interviews of five to eight students, ideally two groups per research site. She asks a suite of 20 standard questions. In her study, a research paper is defined as "any assignment where it is up to the student to identify two or more resources for the purpose of writing or speaking on a topic."[17] So far, she has interviewed more than 65 students. Gaba has not yet reported broadly on study results. To date, she has discovered that students indicate using Google, online booksellers' search-inside-the-book features, and online catalogs more than they use article databases. She also found that a first step in research for some students was to ask professors directly to suggest sources. In terms of what makes a text valuable for research purposes, her participants generally wanted trustworthy sources. They identified trustworthiness with the correct doctrinal position of the work or the fact that a professor recommended it to students. Gaba defines student research as a specific academic task requiring the discovery and use of new information. Her approach situates information gathering in what Tanni and Sormunen call assigned learning tasks.[18]

Finally, Penner[19] studied information needs and behaviors of students at International Baptist Theological Seminary

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[12] Jannica Heinström, "Broad Exploration or Precise Specificity: Two Basic Information Seeking Patterns Among Students," *Journal of the American Society for Information Science & Technology* 57, no. 11 (2006): 1440-1450.

[13] Ibid., 1441.

[14] T. Patrick Milas, "Patterns of Information Behavior in Theological Research: A Bibliometric Analysis of Acknowledgements in Theological Dissertations," in *Summary of Proceedings*, vol. 62 (presented at the American Theological Library Assocation, Ottawa: American Theological Library Association, 2008): 292-299.

[15] Brenda Dervin, "On Studying Information Seeking Methodologically: The Implications of Connecting Metatheory to Method," *Information Processing and Management* 35 (1999): 727-750.

[16] Ruth Gaba, "Reading Researching and Writing of MDiv Students: a Preliminary Report," in *American Theological Library Association Summary of Proceedings*, vol. 62 (Ottawa: ATLA, 2008), 288-292.

[17] Ruth Gaba, "Research Habits of MDiv Students: The Tools They Use and What They Value in a Text," in *American Theological Library Association Summary of Proceedings*, vol. 63 (St. Louis, MO: ATLA, 2009), 73.

[18] Mikko Tanni and Eero Sormunen, "A Critical Review of Research on Information Behavior in Assigned Learning Tasks," *Journal of Documentation* 64, no. 6 (2008): 893-914.

[19] Katharina Penner, "Information Needs and Behaviors of Theology Students at the International Baptist Theological Seminary," *Theological Librarianship* 2, no. 2 (December 2009): 51-80.

(Prague, Czech Republic). Her study participants were enrolled in master's and doctoral programs in theology. Her study partially replicated the survey approach of Gorman[20] and Steig Dalton and Chamingo.[21] Participants in her study, however, were mainly part-time students who visited the campus annually for intensive course work. Penner found that participants valued books and journal articles as information sources. They also valued websites, theses, and archives. Doctoral and master's students had different patterns of information seeking. "Doctoral students ranked higher the consultation of experts and librarians [than did master's students], and they more often used search engines, abstracts and indexes, and publisher catalogues."[22] Less than a third of participants reported that they discussed their research with a librarian or took part in information literacy training.

This review of twenty-first-century literature shows the paucity of knowledge about the information-seeking patterns of theological students at the master's level. Milas's study focused on doctoral students. Heinström's study focused on students at the thesis stage of their academic work and included only four theological students. Brunton and Gaba used qualitative methods; the other studies used surveys. Thus, this study will contribute needed data to the modest extant knowledge base about how master's students in theological schools find and use information in their assigned learning tasks. Moreover, the interactive qualitative analysis (IQA) approach, described in the next section of this report, will contribute not only thematic content, but suggest how the research process functions for students as a conceptual system or mindmap.

2. Research Questions and Study Design

In this section, we state the study's research questions and describe our research process at UZTS.

Research Questions

The research questions for this study were

1) What themes do participants use to describe their research process?

2) How do these themes form a system of thought or mindmap?

3) How do participants decide when to stop gathering information during their research process?

4) How are other people involved, if at all, in the information gathering that students do?

Study Design

This study used interactive qualitative analysis (IQA),[23] an approach rooted in phenomenology.[24] In IQA, researchers use a combination of group and individual interviews to discover key themes of the phenomenon under study. A

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[20] Gary E. Gorman, "Patterns of Information Seeking and Library Use by Theologians in Seven Adelaide Theological Libraries," *Australian Academic & Research Libraries* 21, no. 3 (1990): 137-156.

[21] Margaret Steig Dalton and Laurie Chamingo, "Historians and Their Information Sources," *College & Research Libraries* 65, no. 3 (2004): 400-425.

[22] Penner, "Information Needs and Behaviors of Theology Students at the International Baptist Theological Seminary," 62.

[23] Norvell Northcutt and Danny McCoy, *Interactive Qualitative Analysis: A Systems Method for Qualitative Research* (Thousand Oaks, CA: Sage, 2004).

[24] See, for instance, Alfred Schutz, *The Phenomenology of the Social World* (Evanston, IL: Northwestern University Press, 1967). Northcutt and McCoy explicitly acknowledge their indebtedness to Husserl and Merleau-Ponty (4). Phenomenology in the social sciences seeks to understand what behavior means to social actors themselves, not only to outside observers who have, in effect, a second-hand sort of knowledge. For an example of a recent phenomenological study, see Dianne Chisholm, "Climbing like a Girl: An Exemplary Adventure in Feminist Phenomenology," *Hypatia* 23, no. 1 (March 2008): 9-40.

distinctive feature of IQA is the use of rule-driven protocols that organize the themes voiced by participants into a *mindmap*, a depiction of themes arranged as a closed system of *drivers* (themes that exert influence on many other themes) and *outcomes* (themes that, relatively speaking, are influenced by other themes more than they are a source of influence). In an IQA study, researchers ask participants about the relationships between each theme and every other theme. These *theoretical codes* determine which themes are drivers and which are outcomes in the mindmap. The mindmap reflects how typical participants understand the phenomenon being studied, in this case, the research process.[25] In an IQA study, researchers report themes discovered primarily via synthetic quotations, because the emphasis is on gaining a sense of typical experience.

In the spring 2010 term, researchers conducted a focus group of eight participants at Ulrich Zwingli Theological School (UZTS), all of whom were students in either the Master of Arts (Theological Studies) or Master of Divinity programs. Participants had been enrolled on a full-time basis at the school for at least one semester. The rationale for including students enrolled in two different degree programs was that all students took the majority of their classes in common, had the same set of professors, and had access to the same library resources. Table 1 displays demographic information about focus group members. Most focus group members were enrolled in the MDiv program. Of the eight participants, five were women and three were men. Focus group members had received their most recent degree over a wide range of years (1974 to 2009). Focus group participants spanned the age range of students comprising the master's student body at the research site.

Characteristics of Focus Group Participants

Degree Program	MATS: 2	Master of Divinity: 6
Gender	Female: 5	Male: 3
Year of most recent degree	Range: 1974 to 2009	Median: 1990
Year of enrollment at Site	Range: 2004 to 2009	Median: 2008

Table 1

Researchers led participants through a brief guided imagery exercise to get them thinking about their experiences doing research as seminary students. Participants then silently wrote on index cards any words, phrases, or symbols that occurred to them in response to the prompt, "Tell me about doing research." In the second stage of the focus group, participants collectively arranged the cards into rough categories and discussed what the categories described. Researchers recorded and transcribed the discussion.

Focus group members identified a total of six themes for the research process. Researchers then refined the tentative names of categories using IQA rules.[26] Table 2 displays the themes and their definitions. We report these themes in detail in the results section of this report.

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[25] In this study, researchers asked participants about the flow of influence between six themes. Using procedures detailed by Northcutt and McCoy (pp.149-195), researchers compiled twenty-one sets of theoretical codes to produce the mindmap show in Figure 1. For a report from a study using interactive quality analysis, see Timothy D. Lincoln, "How Master of Divinity Education Changes Students: A Research-Based Model," *Teaching Theology & Religion* 13, no. 3 (July 2010): 208-222.

[26] Northcutt and McCoy understand themes to encompass a range of possible expressions. For instance, focus group members might identify "positive emotions" and "negative emotions." For IQA purposes, a single theme of emotions is adequate.

Themes and Definitions, Theological Student Research Process

THEME	DEFINITION
Preparing	Ways that students begin the research process.
Managing Time	How students use time while doing research.
Self-care	Ways in which students care for themselves during the research process.
Gathering Information	How students discover, retrieve, and analyze various kinds of information.
Writing a First Draft	How students put their ideas into an initial document.
Revising	How students make changes to their first draft.

TABLE 2

The six themes formed the basis of an interview protocol that researchers used to interview eleven students individually about their own research process. In individual interviews, the researchers asked participants to speak about their own experiences of each theme. Researchers also asked two other questions: 1) How do you decide when to stop gathering information during the research process? 2) In information gathering, how are other people involved, if at all? In the final part of each interview, researchers asked participants about patterns of influence between themes (theoretical codes), working through the six themes by pairs.[27] Researchers also collected theoretical codes from ten other students. Thus, researchers collected a total of twenty-one sets of theoretical codes.[28]

Table 3 displays demographic information about participants who were individually interviewed. The majority of participants interviewed were students in the MDiv program. Approximately half were women and half were men.[29] While some study participants split residency between seminary housing and their permanent address, all were enrolled at the school on a full-time basis. At the time of the interviews, four of the participants were under 30 and four were over 50. The median age was 43.

Characteristics of Individual Interviewees

DEGREE PROGRAM	MATS: 2	Master of Divinity: 9
GENDER	Female: 5	Male: 6
YEAR OF MOST RECENT DEGREE	Range: 1974 to 2008	Median: 2001
YEAR OF ENROLLMENT IN SEMINARY	Range: 2006 to 2009	Median: 2008
AGE	Range: 22 to 66	Median: 43

TABLE 3

Researchers recorded individual interviews, which generally lasted approximately 45 minutes (range: 35 to 55 minutes). Following IQA procedures, researchers analyzed the interview transcriptions to discover subthemes.

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[27] Because there were six themes, there were a total of 15 pair-wise combinations. Participants were asked (for instance), "Does self-care influence gathering information? Does gathering information influence self-care? Or is there no relationship?" In cases where participants said that sometimes the influence worked one way, sometimes another, they were asked to decide how the flow of influence worked for them most of the time.

[28] Each set of theoretical codes contributes to the shape of the group mindmap. More codes mean that one individual's contribution makes a relatively smaller impact. Northcutt and McCoy (pp. 290-291) argue on the basis of their experience that fifteen sets of codes are too few.

[29] During the academic year when this study was conducted, there were 10 students enrolled in the MATS program and 114 enrolled in the MDiv program at UZTS. Approximately 58 percent of the master's students were women; 42 percent were men. Thus, individual interviews in this study over-represent the proportion of men at the research site.

Participant comments about how themes exerted influence on other themes were supplemented by theoretical codes collected from ten other students.

3. Results

This section reports study results. The first subsection reports the themes and subthemes described by participants. The second subsection reports responses to the research questions about how students decide to stop gathering information and how other people are involved in the information-gathering process. The third subsection presents the mindmap that researchers produced from the theoretical codes provided by participants and interprets the mindmap. The fourth subsection displays and interprets the mindmap of a participant whose mindmap diverged most from the group mindmap.

Themes and Subthemes

Researchers analyzed individual interview transcripts to discern subthemes. As summarized in Table 4, study participants identified six themes of their research process: preparing, managing time, self-care, gathering information, writing a first draft, and revising. Each theme had between three and ten subthemes. In this section, we report the breadth of each theme by using illustrative quotations. Our interest is to document as vividly as possible the range of participant experience rather than focusing on discrete individuals.[30]

During interviews, participants spoke about how they managed time in response to questions about each of the six themes. In this report, all participant discourse about managing time has been placed under a single theme.

Themes and Subthemes, Theological Student Research Process

Theme	Subthemes	
Preparing	Clarifying the Assignment	Different Project, Different Preparation
	It's In My Head	Sharpening My Topic
	Talking It Out	Preliminary Search
	Noting Semester Requirements	
Managing Time	Setting Deadlines	Schedules
	Determining Time Needed	Ability to Manage Time
	Managing Time Is Self-care	Working in Blocks of Time
Self-care	Nurturing the Body	Ability to Exercise Self-care
	Work Locations	
Gathering Information	Sources I Knew About	Analysis of Information
	Recommended Sources	Quantity of Information
	Computer Searching	Joy of Research
	Formats of Information	

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[30]Readers interested in richer examples of student discourse may contact the researchers.

Writing a First Draft	Note Taking	Starting Writing
	Outlining	In My Head
	First Draft	Structure/Flow of Argument
	No to Draft & Revise Approach	The Right Way
Revising	Setting Aside	Citing Sources
	Sharing with Others	Continuously Revising
	Multiple Drafts	Craft of Writing
	Revising as Tweaking	

<div align="right">TABLE 4</div>

Theme 1: Preparing

According to participants, there are seven aspects to preparing. Students spoke about clarifying the assignment with instructors, talking ideas out with other students, and taking note of semester requirements. Students sharpened the focus of their topics. Preparation involved getting ideas out of their minds and onto paper. They reported that different assignments required somewhat different approaches. Finally, many students conducted preliminary searches as part of their preparation.

Some students said that they clarified assignments with their professors as part of their preparation. They reviewed the syllabus to make sure that they understood the guidelines. This was necessary because "not all professors' assignments are crystal clear."

Nine students reported that preparing involved working with preliminary ideas in their minds, ideas that "pop up during a lecture, or when my mind wanders in class." Students said that ideas simmered in their minds over time. Some reported that they began thinking about paper topics early in the term because good ideas often developed when percolating "on the back burner." Five students said that talking with others was part of their preparation for research. One said, "I pitch an idea to a fellow student and ask, Does this sound like it works? Is it interesting?"

Some students said that noting all semester requirements was part of their preparation because they needed to budget their time. "Part of the process is time constraints. There's some relief in knowing where you're going."

Participants noted that different projects required different ways of preparing, depending on the specific nature of the assignment. One used *lectio divina* as part of her sermon preparation. Students who started a paper "knowing nothing" reported that they had to do more research upfront than if they had a broader knowledge base.

Ten students wrote about sharpening the focus as part of their preparation. A focus made a paper deeper: "I like to pick something that's fairly narrow and go into more depth rather than something that's broader." Students used personal interest to help them sharpen their focus because they enjoyed the process more if the topic was already interesting to them, or would tie into their eventual plans for Ph.D. work. Some students said that the availability of resources helped them shape the focus of their papers. One reported, "Sometimes I make changes once I get some materials. For a missiology paper, I had to choose to focus on Africa or Latin America. I couldn't find anything on Africa at all, so I went with Latin America." Another student reported that she prayed for guidance about the focus for her research papers.

Eight students said that they conducted preliminary searches for resources as part of preparing. In some cases, professors gave students a preliminary list of sources to use. Some students conducted preliminary searches on the Internet as part of preparing. They used Google, Google Scholar, Google Books, or Wikipedia. Some students

conducted preliminary searches using the library catalog or databases provided through the library (e.g., *Religion Database*).

Theme 2: Managing Time

The theme managing time had six subthemes. Participants discussed setting deadlines, determining time needed, time management as self-care, schedules, ability to manage time, and working in blocks of time.

Setting deadlines was important to several participants in allowing them to manage time well. "I budget my time," one student said, so "I know exactly what I'll be doing each semester."

In contrast, one participant took a very different approach to self-imposed deadlines: "I don't have internal due dates necessarily. It's more visceral. I'm not going to beat myself up if I don't have something done by a certain time. I want it to be more intuitive."

Several participants worked out how much time each element of the research process might take them in order to better manage time, an approach one student called "reverse engineering." Another reported that writing a paper had four steps: gathering research, brainstorming and outlining, writing, and, finally, revision. Many participants allotted a specific period of time for revising a paper.

Managing time well went hand-in-hand with self-care for several participants. One reported that managing time "brings the anxiety way down." Another stressed that setting aside time to write in the morning was important, because creativity was higher earlier in the day.

Trying to find time for the research process in the midst of all of the requirements of life was a shared concern. One student said, "I'm a dad and my wife has stuff going on. I'm working around their schedules. It's not really a time *management* thing—it's more snatching time to write whenever I have it."

A number of participants confessed that managing time was not easy for them. One student described herself as "pressure-prompted" by deadlines. Another confessed that he easily got distracted by Facebook and e-mail when he knew he should be writing.

Some participants managed time much better when they were particularly interested in the topic they were researching and writing about. One student said, "If I have the desire, then the time will be there. If there's not desire, then I'll fill the time with something else."

For some participants it was important to have large units of time to devote to a project. Four-to-six-hour blocks were ideal, but an hour was the minimum needed. "If I don't have at least an hour, then there's no point in starting to work." An important dimension of research and writing was to take time away from the project. "I think those break times are important for me because my head gets clogged up. It gets to a point where I'm not really thinking anymore."

Theme 3: Self-care

Under the general theme of self-care, participants discussed nurturing the body, work locations, and factors impinging on their ability to exercise self-care. Some participants described an intentional effort to take care of their physical well-being. Nurturing the body included eating full meals, getting enough sleep, and exercising. One student likened writing papers to world-class athletics: "Think about the Olympics and how they all prepare for the events. It's an event for me to write. All the research—that's the training and preparing. It's crazy but I love it."

Some participants indicated that the location in which they worked on research papers was important for them. Some preferred working at a coffee shop rather than in their apartments or dorm rooms, in part because they wanted to work "in a place that's not crazy but has people around." Another reported shifting work locations from the library to his apartment, then to elsewhere on campus. "I can't stay burrowed up. Part of self-care is knowing that about myself."

Some participants indicated that the ability to take care of themselves hinged upon their emotional response to the research process. For some, research energized them, and they spent several hours in a row working without fatigue. Some interviewees noted that family responsibilities impinged on self-care. They wanted to spend time with their families and chose to cut back on sleep during "paper-writing weeks" in order to get the work done.

Theme 4: Gathering Information

Under the general theme of information gathering, participants discussed seven sub-themes: sources I knew about, recommended sources, computer searching, formats of information, analysis of information, the quantity of information, and the joy of research. Some participants spoke about using sources they already knew about when they were working on new research projects. Some referred to materials that they owned, such as the *Harper Collins Bible Commentary* or *Oxford Companion to Christian Thought*, what participants called "overview resources." Some participants consulted known items in the library, bibliographies from other papers, or course readings. Using sources already known to students was efficient. Students reported that they frequently would use "something that I have ready from before" rather than seek out new information sources.

Participants stated that they consulted sources suggested by professors. Students also asked for recommendations from classmates and friends, including "pastor friends who tend to be more academic."

Most study participants reported that they searched for information using computers. They searched the library catalog and subscription databases and used Internet search engines (Google or Yahoo). Some used Google Books or Amazon because "you can search the whole book for a phrase." One participant first used Google Books to identify a specific passage of interest, then found the physical book in the library. Students expressed a range of confidence about their searching ability. Some said, "I don't have a refined process. I'll just type a topic in the search engine." By contrast, others reported that they could "do Google searches that are specific enough to find what I want."

Participants reported using a variety of information formats. Specifically, they used websites, books, and journals. Most students reported that they used websites such as Wikipedia, denominational websites, and free, online reference works such as the *Stanford Encyclopedia of Philosophy* during information gathering.

Almost every participant spoke about using printed books. One student contended, "If I can find one good book on the topic to use as the cornerstone, that is very helpful." On the other hand, one participant resorted to printed books only when he could not find an online copy. The reason was that his time was limited:

> Once I already have a thesis that I'm working toward, it's too late for me to spend time in the front of a book, just pleasure reading. I have to go to the section of the book that I think will be worth my time. I use printed books in my research if I find one that I like that is brief enough.

Almost every participant reported that he or she used journal articles for research. One participant reported frustration at his attempts to find journal articles online because "there's so much online where you can't access the article or you have to pay for it. That irritates me. That's why I don't do it."

Participants described how they used the information that they discovered during research. They read, took notes, and created categories. They attempted to make judgments about the quality of the information that they found.

Reading was skimming or in greater depth. Participants skimmed to see if a document was applicable or not. Some participants systematically took notes on cards—"dozens, if not hundreds"—or using software for taking notes. Others were more casual: "I learned to do the whole note card thing in high school but I don't like it. I look at the book and write."

Participants made judgments about the quality of information sources that they discovered. They distinguished popular Christian books that "do not count for an academic research paper" from academic works. Some students expressed concern about the quality of information discovered on websites. While some said, "If you're familiar with the Internet you can tell what's acceptable," others were less confident: "It's hard to know sometimes if what you have is good."

All participants interviewed spoke about the quantity of information that they discovered during the research process. Some reported finding an abundance of sources. "Rarely do I use more than 25 percent of the index cards I write. There is always more information out there." Some participants praised the quantity and quality of information available to them in the "amazing" seminary library: "I don't know if shelf browsing would be as effective in a library that doesn't have as good of a collection. We have a really good collection here."

Finally, half of those interviewed expressed emotional satisfaction with at least some parts of the process of writing research papers, especially immersing themselves in new information.

Theme 5: Writing a Draft

Participants spoke about nine subthemes under the theme of writing a draft. They reported that they took notes, created outlines, and wrote a draft. Some stated that they did not write a draft and then revise. Participants started writing and said that they had thoughts in their heads to get out. They talked about the flow of their arguments. Some talked about the right way to write research papers.

Study participants reported that they took notes from their readings as part of their drafting process, whether on scraps of paper, in the margins of books, or on note cards. Some students organized their notes by using highlighters or sorting them into categories. Another participant explained that he did not typically take notes: "I would benefit from taking notes as I go along… but the paper that I felt like was the most successful I just wrote everything that I had in me."

Almost every participant commented on outlining as part of writing a draft. The outline got ideas out of their heads and into a document. For participants, the outline was a framework for placing ideas into a logical structure that "makes my notes logically sift themselves out to where they need to go." The outline was the skeleton for adding evidence.

Most participants talked about writing a first draft. The draft built an argument slowly and dynamically: "It starts off very skeletal, then fills out." Although most participants spoke about writing a draft, most also stated that they did not think about writing as a sequential process of drafting followed by revising. Instead, some parts of a draft were written out for the first time while other sections of the paper were being polished. One student said, "I'm editing and rearranging as I go. It's a conversation. I try to be in a continual state of editing."

Participants spoke about how they began to write their drafts. Some said that it was difficult to begin the task because "it's all swirling and doesn't seem to come together." Others spoke about beginning to write matter-of-factly because they had to keep on schedule and had a system. "I'm simply there to assimilate what I have," one student said. Many participants described writing a draft as something that happens in their heads with ideas jumping around. One student said, "I see the form of my paper in my head, it literally becomes an image that I see as I'm going along." Participants wanted to write a draft that had coherence and flow. They often spoke about writing as making connections "so the professor can see the argument." The ideal draft has "a flow to it, the whole organic thing."

Some participants spoke about a correct or customary way to go about writing research papers involving an outline "like they made us do in high school." Another participant acknowledged that her research and writing process was exactly what she had been taught in middle school. "Our teacher chose the topic. We had a certain number of resources we had to look up in the library. We had to write over 500 index cards, an outline, and a rough draft of 20 pages. He went through it and we had to revise it."

Theme 6: Revising

Participants spoke about the theme of revising the initial draft. Some set their drafts aside. Some shared them with others. Some wrote multiple drafts; others said that revising was a matter of tweaking only. Several spoke about citing sources. Some reported that revision was a continuous process. Finally, some spoke about the craft of writing.

Some participants reported that they set a draft aside, when possible, as part of their revising process. "When I come back to my draft," one student said, "usually I can see the flaws or errors and amend them easily." Two participants said that setting a draft aside was not part of their process because "I'm never done with it," and setting a draft aside leads to losing the thread of the paper's argument.

Some students shared a draft with others in order to get feedback. "I know that what's clear to me is not always clear to the reader." Participants spoke about the challenges of receiving feedback from others due to time constraints. One student said, "I don't show my papers to my peers because everyone else is just as busy as I am." In some cases, participants shared a draft with a writing coach or with other students as part of a seminar.

Some participants reported that they wrote multiple drafts. In some cases, revision was "a pretty complete rewrite" of the initial draft. Another student had her writing coach read her second or third draft. In contrast to the comment about thorough rewrites of initial drafts, some participants said that revision was a matter of making minor changes. One student said these typically were "cosmetic changes" or spelling errors. Students reported that their practice was to work on bibliographic information and footnotes as they wrote their drafts so that they did not need to spend time going back over the paper near the due date.

Many participants reported that they constantly revised their research papers rather than drafting, setting the draft aside and then revising. One student said, "I revise as I go because when I'm typing and I need it to segue into something else, I may see that my text doesn't do that elegantly. So I have to go back and fix it before I can move on." Some reported that they constantly revised because of time pressures. "I'm writing until the pages come off the printer and I walk out the door and deliver it. I don't have time for revisions." Participants spoke about continuous revision as a process of constant sculpting: "I'm continually molding the paper and shaping it until it's turned in."

Many participants spoke about revision as a way of making papers clear and coherent. Revision also involves beautiful expression. Some said, "A lot of revision is trying to find my own voice. I play with my syntax and craft my words. I really try to make me sound beautiful."

How Students Decide to Stop Gathering Information

To answer this study's third research question, participants were asked in interviews, "How do you decide to stop gathering information?" They reported that they stopped when they had enough resources for the particular assignment or because of time constraints. Participants were aware of many sources of information available to them. Responses to this research question relate to the theme of information gathering.

1. Enough Resources for the Assignment

Nine participants said they stopped gathering information when they determined that they had enough material. Having enough material, for some, meant supporting the line of argument in the draft. One said, "I don't stop gathering information until I have all the expert quotations that I need as a foundation for what I want to say." Another said, "When I have enough information to fit into the categories that I want to cover, I stop."

Some reported that "enough" was tied to the page-requirements of the assignment. According to one student, ten sources were too many for a five-page paper. On the other hand, to meet a page count, a student might "need to crack open another book because that page count is looming." Students were aware that the assignments they worked on did not require exhausting all informational possibilities. They contrasted their assignments with writing books or dissertations. One respondent said, "I'm not trying to write the definitive book on my topic. Do I have enough to make a beefy paper including my own voice?" As another put it, "I'm not writing my doctoral dissertation; I just have to reasonably address the topic."

2. Time Constraints

Seven participants said that they stopped gathering information because of time limitations. Some set formal deadlines for themselves, what one called "my pre-set schedule" for research. Another reported, "I draw a mental line for myself" to avoid endlessly following research "rabbit trails." Three participants said that procrastination—specifically, avoiding writing—affected their decisions to stop looking for information. They said, "To stop gathering information is hard because of my procrastination. I could read one more resource, one more webpage. I usually decide to stop when the deadline's looming and I only have a certain amount of time left to write."

3. Too Much Information

Four participants commented that choosing to stop gathering information was difficult because they were aware of the vast number of information sources available to consult. One said, "There is always more information out there. I know that. My perfectionist ways want to see every source out there before I turn in a paper."

How Others Are Involved in the Information Gathering

To answer this study's fourth research question, participants were asked, "How are other people involved in your information gathering, if any?" They reported that library staff, professors, classmates, and pastors were sometimes involved. Responses to this research question relate to the theme of information gathering.

1. Library Staff

Eight participants talked about how library staff members were involved in their information gathering. Librarians helped students in initial stages of searching by helping students devise more effective search strategies for the library catalog. Librarians were used when students became frustrated because they could not find materials in the *Religion Database* or they found nothing at all on their topic. As one put it, "When I'm stuck, I go to a professional." Students reported that librarians could get resources outside of the seminary library via interlibrary

loan. Students appreciated the help that librarians provided them. In their words, "The public services librarian has been wonderful, beyond gracious. I've always been really grateful for that."

2. Instructors

Five participants reported that instructors were involved in their gathering of information. Instructors recommended or required specific books to use on assignments. On the other hand, one participant said, "I usually do not ask professors about resources unless it's absolutely necessary. I know that they have a busy schedule and are really pressed for time."

3. Classmates

Five participants said that classmates were involved in information gathering. They consulted with friends about resources or reported that their friends were sounding boards for ideas. One student said that fellow students "can give me important leads."

4. Pastors

Two participants said that pastors sometimes helped them: "If I talk to academically-minded pastor friends about a paper, they'll say 'oh, so and so's book.' When I was doing my ministry practicum, I would go to my pastors who would have knowledge of other resources to use."

SUMMARY OF STUDENT DISCOURSE

So far in this section reporting on results, we have documented the themes and subthemes of the research process, reported student discourse about how they decide to stop finding information, and described the people who are sometimes involved in student information gathering. The next subsection discusses the relationships between the six themes, a distinctive aspect of IQA as a research method.

RESEARCH PROCESS AS A SYSTEM: GROUP MINDMAP

This subsection depicts the six themes (preparing, managing time, self-care, gathering information, writing a first draft, and revising) as a closed system of influences, or mindmap. Flows of influence are shown by arrows. In many qualitative research approaches, analysis is limited to discovering themes of discourse. The IQA approach also collects information about relationships between themes, called theoretical codes. Researchers aggregated twenty-one sets of theoretical codes from study participants. The mindmap shows a topologically simple system of relationships that is a graphic way "to reconcile the richness-parsimony dialectic" inherent in all attempts to interpret complex data about human experience. [31] In short, the group mindmap attempts to show how relationships between aspects (themes) of the phenomenon under consideration are related in the mind of a typical study participant. In IQA, mindmaps depict a constellation of relationships between aspects of a phenomenon. A mindmap does not necessarily represent a temporal sequence of activities. Thus, Figure 1 should not be read as a set of sequential steps.

Figure 1 depicts the group mindmap for study participants. In this system, a loop of three themes (self-care, preparing, and managing time) forms the primary driver of the system. In IQA terms, a *driver* exerts influence on many other elements of a system. The primary outcome is revising. An *outcome* is a theme that receives influence from many other themes, but itself exerts little influence on other themes. Gathering information sits in the middle of the system, in a loop comprised of gathering information, self-care, and preparing.

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[31] Northcutt and McCoy, 176.

The two sets of loops points to recursion, or feedback, in the system. Participants reported that self-care had an influence on how they began the research process, i.e., the theme of preparing. But preparing also made an impact on how they managed time. The ability to manage time affected self-care. This cluster of elements influenced gathering information.
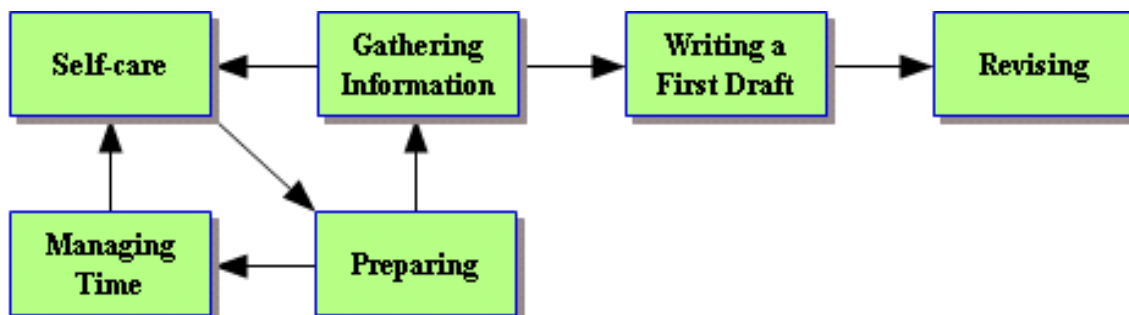
Group Mindmap, Theological Student Research Process

The theme of gathering information sits roughly in the middle of this system. In IQA terms, this means that gathering information was strongly influenced by the themes of self-care, managing time, and preparing. In turn, gathering information influenced writing a first draft and revising. At the same time, gathering information is part of a three-theme loop with self-care and preparing. For instance, participants reported that conducting a preliminary search for information sources was commonly part of how they prepared for their research projects. Doing a competent job of gathering information helped students to feel that they were on the right track. In other words, information gathering influenced self-care.

The mindmap points to the complexity of what students experience during the research process. While students spoke articulately about a chronological series of steps in their research (for instance, making an outline precedes writing a first draft), the mindmap shows the importance of self-care and managing time for *the entire research process*.[32] Indeed, as the participants revealed in interviews, managing time and self-care were almost synonyms for many participants.

Mindmap of an Outlier

Figure 1 displays the group mindmap, showing the flow of relationships between themes for typical participants in the study. By contrast, Figure 2 shows the mindmap of a participant whose flow of relationships diverged from the common way of thinking.

In this mindmap, the driver is gathering information and the outcome is revising. Thus, for this participant, the search for information exerts influence on most other parts of the system.

This participant said that gathering information:

> Influences what I do to prepare. Right now I'm doing a paper for a missiology class. I had to choose
> to focus on Africa or Latin America. I couldn't find anything on Africa at all, so I went with Latin

[32] To reiterate a point made earlier, the mindmap discovered in this study does not depict a temporal sequence. To put it another way, students did not first exercise self-care, then prepare, only then manage time, and only then gather information. The mindmap shows an iterative web of relationships.

America. I get lost in the gathering information stage and then I've used up time that I should have been writing. How well I gather information affects the quality of my draft. If I've gathered information well, I don't necessarily need to do as much revising.
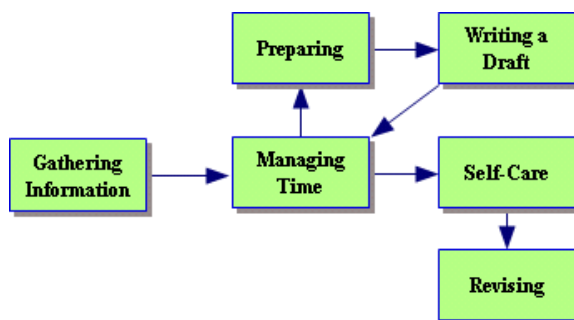
Outlier Participant

In the mindmap of the outlier participant, there is a three-member feedback loop in the middle of the system consisting of managing time, preparing, and writing a first draft. Unlike typical participants (Figure 1), for this person, self-care was not a driver but an outcome.[33]

Summary of Study Results

Before interpreting the results of this study in detail, we close this section with a summary of results. Participants identified six themes of the research process. As organized into a group mindmap, the flow of influences begins with self-care, time management, and preparing, and ends with revision of a draft. The task involves getting ideas from one's head to paper. As revealed by student quotations, there is no single way that students go about research. Some students plot out their use of time for all assignments; others are proudly "pressure-activated." Some students write formal outlines, create a first draft, and then revise it; others use a dynamic process of composing that ends when the clock runs out and the paper is due. Theological students in this study sometimes consulted librarians, professors, classmates, and others for assistance as they gathered information. All study participants acknowledged the need to discover, analyze, and use information sources. Self-care and time management pushed or influenced all other aspects of the research process.

4. Interpretation of Results and Comparison with Kuhlthau's Model of the Information Search Process

The previous section reported results of the study by documenting representative student discourse about six themes of the research process and by constructing an IQA mindmap depicting the process of student research as a closed system of influences. In this section, we first interpret these results by using the IQA technique of zooming and analyzing student discourse in more depth. We then compare the results of this study with Kuhlthau's model of the information search process.

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[33] In some forms of research, outlier data are dismissed as if such data result because of some sort of malfunction. We include the mindmap of an outlier to show the systemic difference between the outlier participant's way of thinking about research and most other students. Suggestions for changing the nature of research assignments might affect this participant's style differently than it might other students. Because this study did not examine student papers, we can make no cogent comments about whether or not the typical mindmap or the outlier mindmap appears to be associated with higher quality work.

Interpretation of Results

Zooming: Super-Affinities

As participants reported many times in interviews, they often did not conceive of the themes, writing a first draft and revising, as separate parts of the research process. Similarly, many interviewees spoke about managing time as part of self-care and preparing. The interplay of those themes is shown in Figure 1 as a feedback loop. Moreover, there is a second loop composed of the themes preparing, information gathering, and self-care. How can we make sense of these two intersecting loops of influence?

IQA posits the helpfulness of *zooming* as a way to make sense of complex phenomena. The zoomed view shows less detail, but aids understanding. "Zooming is an important interpretive tool for the investigator, much in the same way different levels of schematic plans are useful to the architect or engineer."[34] The investigator creates a super-affinity by collapsing two or more themes into one in order to understand a mindmap from a new perspective. Figure 3 shows a zoomed view of the research process in which the *super-affinities* intending and composing replace five of the six initially discovered themes of the process.[35]
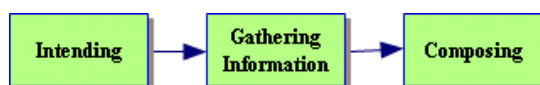

FIGURE 3

Seminarians' Research Process, Zoomed View

The super-affinity *intending* describes the intricate web of project and self-management that students spoke about as the drivers in their research process.[36] The super-affinity thus collapses the themes of self-care, managing time, and preparing. The super-affinity *composing* encompasses the production of a written product to hand in. This super-affinity is comprised of the themes writing a first draft and revising. In the zoomed view, the theme gathering information continues to sit in the middle of the system, influencing composing but being influenced by intending.

The zoomed view suggests that the process that students use to write research papers is not primarily driven by what, on the surface, one might name as the two primary tasks required (getting information and writing a paper based on that information). Rather, intending drives the process. Students manage their use of time and take care of themselves throughout the entire process. The zoomed view, therefore, suggests that students who have difficulty taking care of themselves emotionally or physically, or who have difficulty managing their time, will face problems in doing research, no matter their level of technical skills in gathering information or crafting academic prose.

Analytical Observations

The group mindmap (Figure 1) shows the flow of influences between the themes for typical study participants. In the previous subsection, we used zooming to interpret the relationships between the themes as a process of intending, information gathering, and composing (Figure 3). The discourse of interviewees, however, shows that

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[34] Northcutt and McCoy, 335.

[35] In classroom teaching, Northcutt and McCoy call feedback loops that have been given new, zoomed, names "super affinities." For ease of reading, we have hyphenated this technical term.

[36] We use the term *intending* in much the sense that Michael E. Bratman envisions intention as a partially rational human activity that leans to the future. In other words, it is a mental state that influences actions, in this case the complex set of actions that students undertake to conduct theological research. See his *Intention, Plans, and Practical Reason* (Cambridge, MA: Harvard University Press, 1987).

students have more than one way of conducting research even though the flow of influence between themes remains the same. In this subsection, we offer five analytical observations based on participant interviews. First, according to participants, a key driver in their research process apparently has little to do with research: self-care. Study participants understood that getting enough sleep and remembering to eat were requirements for getting work done. They spoke about finding the right places to work and changing their location of work. One participant spoke about worship as a way to "get settled" for the demands of seminary work.

Second, in terms of time management, there appear to be two clusters of students. Some manage time by plotting out stages of their research, then stick to their calendar. Some of them build in enough time to set a draft aside for a while or ask other students for their feedback. On the other hand, some students admit to being "pressure-activated." They tend to compress the research process because they do not engage until they feel the deadline looming. Participants frequently liked to work in large blocks of time on research projects, but reported that time management was difficult because of family obligations and course schedules. In other words, students were aware that their research was simply one aspect of their lives as students.

Third, study participants all had strategies for finding information and note taking. For many, this began with a quick-and-dirty search on Google to "find out what's out there." Several participants frequently used books from the seminary library; some cut down on their reading time by first using search-inside features in a digital book before resorting to a printed volume. Participants sometimes asked librarians for help. A few participants sought help with search techniques; others asked librarians for assistance in retrieving known items (e.g., interlibrary loan requests). Students did not show knowledge of subject searching. Students also did not distinguish searching in the so-called free Internet from proprietary databases. They expressed some concern about their ability to assess the quality of information (e.g., what is a high-quality website).

Fourth, participants in this study had a range of preferences for information formats. Some students liked to use books for their writing assignments, either because they thought that books were more authoritative than online resources or because they could literally put their hands on books in the library that eluded them in Google Books. One participant seemed to boast about not using print journals. For some participants, a benefit of digital formats was that they did not have to read the material immersively, but could search for key words in the text. It is not clear from these interviews that immersive reading or skimming is necessarily associated with the format of the information being read, nor with how students managed time. In other words, some self-acknowledged procrastinators stated that they read deeply because they enjoyed immersing themselves in books, while other procrastinators often skimmed. (To be sure, immersive reading and skimming are two ends of a continuum of how individuals engage a text.)

Fifth and finally, participants had a range of composition styles. Some avoided starting to write for as long as possible because they felt that research was more fun than writing. Others systematically created outlines, linked quotations to the outline, then fleshed out a full draft. For them, writing raised no special anxieties. The majority of participants denied that they wrote a draft and then revised it; instead, they continuously worked through their text starting at the beginning. For some students, this revision process seemed capable of indefinite extension. They stopped because the paper was due. Only one student spoke about using a writing coach. Participants clearly understood that their research assignments were finite, and did not require either comprehensive literature searches or extensive writing. The longest page length mentioned in interviews was twenty pages. Students made judgments about how many note cards and sources they needed to construct a paper of a given length. In interviews, students identified three kinds of papers involving research: sermons, exegetical papers, and research papers. Repeatedly, students talked about making arguments in their papers.

UZTS Students and the Information Search Process

In this subsection, we put the results of our study into conversation with Kuhlthau's widely admired model of the information search process (ISP).[37] In Kuhlthau's model, searchers move from relative uncertainty to greater certainty as they find and analyze information, always with the purpose of creating a presentation or product. Kuhlthau identified six stages in ISP. In the initiation stage, searchers "prepare the decision of selecting a topic." Selection means "to decide on [a] topic for research." Exploration refers to initial searching for information. Formulation means "to formulate a focus from the information encountered."[38] In the collection stage, searchers gather resources. Finally, in the presentation stage, the searcher explains her learning (e.g., through a paper).

According to the ISP model, as searchers take cognitive action (seeking relevant and pertinent data), their thoughts become more focused. As they discover information, searchers' feelings change as well. There is a spike of emotional uncertainty. "One of the most surprising findings was the discovery of a sharp increase in uncertainty and decrease in confidence after a search had been initiated during the exploration stage."[39] The ISP model posits a crucial *zone of intervention* during this stage. While searchers occupy this zone, an information professional may genuinely assist them in finding and acquiring pertinent sources. "Intervention outside of this zone is intrusive on the one hand and overwhelming on the other. Intervention on both sides of the zone of intervention is inefficient and unnecessary."[40]

The results of this study are consistent with ISP in several respects. Interpreted as a sequence, the themes of preparation, gathering information, writing a first draft, and revising roughly parallel the six-staged sequence of the ISP model (initiation, selection, exploration, formulation, collection, and presentation). Table 5 shows these relationships. In accord with the ISP model, study participants clarified the specific assignment and sharpened the foci of their papers. As they prepared, some students conducted initial searches for information. The theme of preparing in our study roughly parallels Kuhlthau's initiation, selection, exploration, and formulation tasks. Consistent with the ISP model, study participants reported that their thinking evolved into a manageable argument, aided by the discovery of pertinent information.

INFORMATION SEEKING PROCESS TASKS					
Initiation	Selection	Exploration Zone of Intervention	Formulation	Collection	Presentation
SELECTED PARTICIPANT THEMES, UZTS STUDY					
Preparing		Information Gathering			Drafting and Revising

TABLE 5

Comparison of Information-Seeking Process and Study Results as Temporal Sequence

On the other hand, some results in this study differ from those predicted by the model. Kuhlthau reports that the exploration stage increases researcher anxiety because they frequently discover "inconsistent, incompatible

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[37] Tanni and Sormunen (897) note that Kuhlthau's model has the virtue of being "an empirically verified framework." Kuhlthau forged her model from study of how high school students find information, then expanded the empirical base with a study of school, public, and academic library users. See Carol Colier Kuhlthau, B.J. Turock, M.W. George, and R.J. Belvin, "Validating a Model of the Search Process: A Comparison of Academic, Public and School Library Users," *Library and Information Science Research*, vol. 12 (1990): 5-32.

[38] Kuhlthau, *Seeking Meaning*, 44, 46, 48.

[39] Kulhthau, *Seeking Meaning*, 206.

[40] Carol Colier Kuhlthau, "Kuhlthau's Information Search Process," p. 233 in *Theories of Information Behavior*, eds. Karen E. Fisher, Sanda Erdelez, and Lynne (E.F.) McKennii (Medford, NJ: Information Today, 2005).

information."[41] In this study, participants did sometimes report frustration when looking for information, but they dealt with this frustration by such strategies as changing their topic, consulting with friends, or even asking librarians for assistance. The ISP model suggests that librarians are most helpful during the exploration stage of the process, when searchers are groping for clarity amidst ambiguous or contradictory information. Based on our interviews, it is not clear that participants only resorted to librarians at the exploration stage. For instance, they asked librarians for interlibrary loans at a point in their process where they had already zeroed in on a topic. Some participants enjoyed pursuing informational "rabbit trails" and delayed writing because they were wanted to discover more and more information. Participants frequently talked about writing a paper as making an argument. Such discourse presupposes that other voices might disagree with the writer's viewpoint—and that conflict is the matter-of-fact business of scholarship. In other words, for participants in this study, the discovery of contradictory or incommensurate points of view did not assault their self-confidence or raise anxiety.[42]

5. Further Research

The study reported here provides a glimpse of the complexities involved in how theological students do research at one seminary. We look forward to fuller reports from Gaba about her larger-scale project. The findings of our study suggest six lines for further inquiry. First, researchers might examine the work produced by self-identified "planners" versus "pressure-activated" students. Does one sort of workstyle produce better final products? The UZTS study only explored how students think about the research experience. Researchers did not examine any papers written by students.

Second, in this study students spoke about how they honed their research topic by, in part, clarifying the expectations of their instructors. Another line of research could examine how seminary professors communicate their expectations for student research.

Third, participants in this study talked at length about how they construed what it means to write a first draft and revise it. For several of them, the composition process was not a neat, linear sequence of outline, draft, and revision. How widespread is the technique of constantly revising a draft, as described by some study participants? Further research would have implications for how librarians assist students and how professors might choose to craft assignments.

Fourth, study participants spoke about how librarians, professors, and classmates assisted them in finding information sources. Based on the interviews, it is unclear whether or not asking for this kind of help occurred primarily early on in the research process, as predicted by the ISP model. Therefore, further study could examine how theological students move through what Kuhlthau calls the initiation, selection, exploration, and formulation stages of information seeking.

Fifth, students in this study expressed confidence in their ability to discover appropriate information in part because they had confidence in the quality of the on-site collection of materials available to them in their library. Based on gross volume count, the size of theological libraries in North America varies dramatically. Research at several sites could ask students about the quality of collections. Does student satisfaction with collections have anything to do with collection size? Do students frequently rely on on-site collections when writing research papers rather than using digital information? Such research has implications for collection development.

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[41] Kuhlthau, (2005) p. 230.

[42] Kuhlthau's work developed by studying high school students and undergraduates. Participants in this study, by contrast, were graduate students (and presumably were several years older than Kuhlthau's students). They all had systems for getting the job done. When they did express confusion in interviews, they also talked about how they resolved that confusion. Specifically, when they had doubts about the quality of some sources (e.g., a website), they found another source that they had more confidence in (e.g., books).

Finally, this study may be replicated in a few years at UZTS, which is in the initial stages of implementing a program of information literacy. (The seminary identified increased information literacy as a way to enhance student learning as part of the school's reaffirmation of the accreditation process.) Replicating the study after the information literacy program is in place might reveal how the program has altered student ideas about the research process.

6. IMPLICATIONS FOR PRACTICE

In this section, we relate study findings to the practice of theological librarianship. Before sketching implications for practice, it is appropriate to note the limitations of our study. Our research was conducted at a single research site. We interviewed each participant once. We assumed that students were telling the truth about their typical approach to conducting research. (A premise of IQA is that individuals are qualified to speak about their own lives.) Based on the examples that students talked about, it appeared that many students were commenting in detail about a paper that they were currently writing or that had caused them special joys or sorrows in the past. Despite the fact that interviews were conducted in a library (and mostly by a card-carrying librarian), we had little sense that participants thought that there were correct answers to any of the questions asked. The research questions for this study focused on how students conceptualize research. We did not read student papers, nor did we attempt to make judgments about whether a certain approach (writing according to a schedule versus being pressure-activated) produced a higher quality product.

Based on our findings, theological educators should attend to five aspects of library service and instruction in order to enhance the research and writing experience of master's-level students. Information literacy, the design of the library, and on-site collections are important. Moreover, instructors should re-think the design of some research assignments. Finally, librarians can collaborate with faculty to improve student research skills by actively serving as research mentors.

INFORMATION LITERACY

Several aspects of our findings point to the need for information literacy instruction for seminarians, reinforcing Badke's contention that poor skills in information literacy form "the biggest blind spot in higher education today."[43] For instance, study participants did not distinguish between various kinds of electronic resources. Google, the search-inside feature of Amazon, and the ATLA *Religion Database* all appeared to be the same sort of digital trawling nets available via a web browser. Some participants resorted to old-fashioned books precisely because they encountered pay walls at the end of their web searches. It may have been the case that students had free access to some of these articles via library subscription databases. This finding suggests, therefore, that librarians should teach students about the difference between subscription databases and more general searching on the web.

Second, study participants reported using relatively unsophisticated search strategies: plugging in key words and hitting enter. No student made statements suggesting knowledge of controlled vocabulary. No participants talked about using peer-reviewed journals. The purpose of controlled vocabularies is to minimize false hits and produce higher quality search results. The purpose of peer-reviewed journals is to vet the quality of articles so that published works have met scholarly standards and thus deserve a broader audience. While librarians understand the value of controlled vocabulary searching and peer review, study participants did not. Librarians, therefore, should teach students about search strategies that yield pertinent, high-quality results.

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[43] William B. Badke, "From Broker to Strategist: Notes of a Traveler in the Strange Land of Information 2.0," presentation at LaGuardia Community College, Long Island, NY, (March 2010), 8, downloaded from www.acts.twu.ca/Library/LaGuardia.pdf.

Finally, study participants were not uniformly confident in their ability to make judgments about the relative authority and reliability of information sources: are the websites of church bodies good sources? Should I cite *The New York Times* online edition in a research paper? Students need help in developing analytical skills to evaluate information sources. In sum, the results of this study suggest the need for information literacy training in theological schools.

Library as Place

Study findings point to the importance of self-care and time management during the research process. Part of self-care involved attention to such bodily realities as the kind of chairs that one sits upon and whether or not one works alone or near others. Theological libraries are *places* where students do their academic work—or choose not to work. If theological librarians want the library to be a place in which to study as well as a delivery point for documents, then librarians should attend to student preferences in seating and lighting. Participants in this study sometimes wanted quiet spaces and sometimes wanted to be in the company of others while they worked. This finding is consistent with twenty-first-century trends in library design that create a variety of social spaces in new library buildings.[44]

The Importance of On-site Collections

Although students may or may not ask a librarian for assistance during their research process, participants in this study relied heavily on books in the UZTS library and spoke well of the depth and breadth of its collection. For instance, some participants reported that everything needed to conduct research for an exegesis paper was available in the library's reference room, where several sets of Bible commentaries, lexica, grammars, and subject encyclopedias were shelved. Another participant reported that he used the online catalog to find a call number that was pertinent to a research assignment and then browsed the stacks, discovering other valuable books along the way. Another participant combined the search-inside feature of full-text databases with consultation of the library's copy of the printed text of the same work. While participants did make use of electronic resources, in this study the print collection of materials in the library building nurtured students as they conducted research. This finding suggests that the bread-and-butter work of selecting, acquiring, and cataloging materials continues to be important work in our profession. Kuhlthau, in our view, undervalues the work of collection management by suggesting that the primary or sole appropriate moment for librarian intervention in student research happens during the exploration stage if and when patrons ask librarians for help. According to our participants, students often found the right stuff in a good library without speaking with staff—an outcome made possible because of the ongoing efforts of librarians to build and maintain print collections.[45]

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[44] Ayub Khan, *Better by Design: An Introduction to Planning and Designing a New Library Building* (London: Facet Publishing, 2009); *IFLA Library Building Guidelines: Developments & Reflections* (München: K.G. Saur, 2007); Scott Bennett and Council on Library and Information Resources, *Libraries Designed for Learning* (Washington, DC: Council on Library and Information Resources, 2003); *Library as Place: Rethinking Roles, Rethinking Space* (Washington, DC: Council on Library and Information Resources, 2005).

[45] In early 2011, headlines predicted the imminent triumph of the e-book throughout the entire universe of publishers and readers. These predictions gain credibility as reading device producers solve problems of formats and the citation conventions of scholarship, and as academic publishers attend to the distinctive requirements of the academic library market. Yet, we know of no theological library devoting more money to electronic books than to printed books. The Charleston Conference (www.katina.info/conference) and blogs such as Sue Polanka's *No Shelf Required* (www.libraries.wright.edu/noshelfrequired) monitor e-book developments pertinent to theological libraries. For a succinct articulation of the tensions between the commercial values of publishers and the educational values of academic libraries, see Daniel Goldstein, "Library Inc.," *The Chronicle Review* (October 22, 2010): B12-B13.

Re-thinking "The Assignment"

If students in other theological seminaries go about the research process the way that students at our research site did, theological librarians need to continue efforts to promote information literacy, take seriously the ergonomics and ambiance of the library, and build print collections that fit with the kind of research papers that students are most likely to be assigned. Another implication of this study points to the persons with the most power to shape student behavior in research: *the faculty* who construct assignments.

Study participants did not report that they wrote sermons or exegetical reports because the thought struck them out of the blue that they should conduct theological research. They did this work because instructors made assignments and set due dates. Students wrote papers to construct arguments that made the professors happy. In our view, librarians who lament the level of student sophistication in searching or analyzing the quality of information need to recognize that the professors hold much of the power to influence student interest and behavior. In this section, we make suggestions for rethinking the nature of the research assignments that faculty members assign students.

We believe that the student research process could be improved if the standard assignment to write a term paper went the way of the mammoth and glyptodont, to be replaced (at least in lower-level courses) by a series of assignments which, when completed, would result in a research report or well-argued paper. At the research site, students often reported that they engaged in brainstorming, focusing a topic, outlining, doing a preliminary literature search, and then composing. They also noted that faculty assignments sometimes provide few hints about what is expected. Head and Eisenberg's analysis of 191 course-related research assignments also concluded that the written directions for writing papers in undergraduate settings seldom provided direction for which databases to search or other specifics of the steps of research "such as how to define and focus a research strategy within the complex information landscape that most college students inhabit today."[46] If students (for whatever reasons) are unable to begin with a very general assignment and work it through to an intellectually robust paper, then instructors can break down the overall assignment into a series of sequential assignments.[47] By requiring students to complete a sequence of small assignments, instructors would accomplish two powerful goods. First, they would require students to focus attention on the manageable components of research early in the process and thereby minimize the problem of procrastination. Second, instructors would build in sophistication to the information-gathering part of the process by pointing students to fruitful databases, discussing technical terms, and describing the rhetoric of a given discipline. If instructors required that students turn in a detailed outline or draft—and then provided students with detailed feedback about that draft—students would be able to correct mistakes or construct better arguments before they turn in the final product. Nothing that we have proposed in

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[46] Alison J. Head and Michael B. Eisenberg, *Assessing Inquiry: How Handouts for Research Assignments Guide Today's College Student,* Project Information Literacy Report*,* July 12, 2010, 2.

[47] Each seminary student is a product of her own educational background. Some students may not have been required to write lengthy research papers as part of their undergraduate major. One recent study of business majors and education majors in Texas public universities, for instance, found that an average of 1.1 courses required a twenty-page paper for business majors, and an average of 1.9 courses required a paper of this length for education majors. David Glenn, "Writing Assignments Are Scarce for Students in 2 Majors in Texas Colleges," *The Chronicle of Higher Education* (January 18, 2011) accessed February 16, 2011 from chronicle.com. Similarly, Richard Arum and Josipa Roksa recently reported that professors are not requiring undergraduates to write long papers (*Academically Adrift: Limited Learning on College Campuses,* Chicago: University of Chicago Press, 2011, pp. 70-73).

this paragraph is remotely innovative.[48] But students who participated in our study did not typically experience the staged approach that we have described. The exception was a final seminar in the MATS program, in which students were required to produce multiple drafts of a major paper. It is an open question whether or not faculty teaching at North American theological schools frequently (or ever) break down a research assignment into its constituent elements.

No doubt, seminaries desire that students graduating with master's-level degrees will achieve a level of writing sophistication by the end of their degree program that would enable them to move through the stages of writing a research paper without the segmented monitoring and coaching that we propose here. But the findings of this study suggest that students would manage their time differently, search for information differently, and make more use of outlining and revision procedures if some research assignments were broken down into a series of connected assignments.

Librarian-Faculty Collaboration to Improve Student Research

Theological librarians collaborate with professors to educate seminary students. If some aspects of the research process can be improved, and if faculty members exert influence over students via their role as instructors, how might librarians collaborate with faculty to bring about improvements in how students understand and conduct research? Other librarians have suggested approaches such as a required research methods course, working with individual professors to insinuate information literacy elements into particular courses, and making information literacy a stated requirement or learning outcome in a degree program.[49] These approaches may improve the quality of student work by providing them with improved research skills, especially skills in information gathering. Librarians may also teach information literacy to teachers.[50]

These approaches make demands on professors to change their teaching habits, which professors may resist. "By far the most prominent inhibition to providing creative opportunities for students to critically engage the sources

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[48] For instance, Christine M. Tardy and Jennifer Courtney observe that "research writing is a messy process." They suggest that "breaking the process into stages can help students develop the many skills involved in research. Through a staged process, teachers scaffold tasks for students, gradually building on the skills that they are developing. . . ." (in *Teaching Academic Writing*, ed. Patricia Friedrich, New York: Continuum, 2008, pp. 76-77). Mary Jane Curry and Ann Hewings contend that "writing is an iterative process" and that instructors "can help clarify students' misconceptions about writing by explicitly teaching the stages of the writing process" (in *Teaching Academic Writing: A Toolkit for Higher Education*, Caroline Coffin and others, London: Routledge, 2003, p. 34). Aspiring researchers are given the same sort of exhortation. For instance, Nancy Jean Vyhmeister tells seminary students that "the research process involves identification, collection, evaluation, and presentation" (*Quality Research Papers for Students of Religion and Theology*, Grand Rapids MI: Zondervan, 2008, p. 3). She breaks down the research process into a series of steps that begin with defining and narrowing a problem. William B. Badke proposes a model for research that begins with research questions, is fed by data and analysis in light of the research questions, and concludes with processed data that lead to plausible conclusions and recommendations (*Research Strategies: Finding your Way through the Information Fog*, 3rd ed., New York: iVerse, Inc., 2008, pp. 19-20). See also Lucretia B. Yaghjian, *Writing Theology Well: A Rhetoric for Theological and Biblical Writers* (New York: Continuum, 2006).

[49] For an example of the research methods course, see William B. Badke, "A One Credit Prerequisite Model for Theological Information Literacy," *American Theological Library Association Summary of Proceedings* 59 (January 1, 2005): 160-164. For an example of integrating information literacy across a curriculum, see Bonnie Falla, "Working with Faculty to Create an Information Literacy Program for a Small Seminary: An Evolutionary Process," *American Theological Library Association Summary of Proceedings* 61 (January 1, 2007): 160-162. One of the learning outcomes of the Master of Divinity program at Austin Presbyterian Theological Seminary is for graduates to "pursue and evaluate knowledge through inquiry, research, contemplation, critical thinking and practice." *2020-2011 Academic Catalogue*, 27.

[50] Melody Layton McMahon, "Librarians and Teaching Faculty in Collaboration: New Incentives, New Opportunities," *Theological Education* 40, no. 1 (January 1, 2004): 73-87.

of their research are the faculties of institutions of higher education."[51] Faculty may resist change because they are protecting their freedom to conduct classes or because they think that poor student research is primarily an issue of motivation.[52] We conclude this section by proposing a model of collaboration in which librarians serve as research mentors for staged research assignments as described in the previous subsection. One of the merits of this model is that it makes clear to faculty that librarians are also directly shouldering the burden of explicating the stages of research. Thus, the responsibility for enhancing student research skills is not solely a new duty for professors.

Librarians as Research Mentors for Staged Assignments: A Model

We propose that theological librarians collaborate with faculty by serving as research mentors for staged assignments. We envision required study groups that would meet on a regular basis with librarians throughout the length of the series of assignments culminating in a complete research paper. A professor and a librarian would consult about schedules, topics, and goals of the assignments so that both professionals share the same purpose. The faculty member would assign the parts of the writing project within the context of the syllabus. For purposes of this discussion, we posit that the staged assignments are (1) topic focus with preliminary bibliography, (2) an outline, (3) a draft, and finally (4) the finished research paper. Each assignment is graded.

At the beginning of assignment one, students would form self-selected study groups and meet with a librarian. The librarian would teach basic information-gathering skills, including specific databases pertinent to research topics. Additionally, the librarian would give direction about making best use of the library's on-site collection, given the scholarly discipline and particular topic assigned. During assignment one, the research mentor would help students narrow their paper topics and introduce them to appropriate literature. During assignment one, faculty would share their subject expertise with students, whether in lectures or individual meetings. We suspect that a problem for many students as they begin research is a limited knowledge base. Yaghjian urges students writing theology to "become familiar with the standard theological and biblical sources."[53] However, master's-level students may simply not know which sources are considered standard for their topic.[54] Both the faculty member and the librarian would review student work on assignment one and provide feedback for the next assignment.

Assignment two asks students to write a detailed outline based on the results of their preliminary information gathering. Students would share this outline with their study groups and research mentor and again receive feedback. Assignment three is a draft covering all points on the outline, to be reviewed by faculty or librarians, and by peers. Students would thus learn of logical or evidentiary holes in their arguments so that they could make needed changes (including finding more information). The final staged assignment is a polished paper, which in our model is now the fourth in a series of logically connected assignments.[55]

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[51] David W. White, professor of Christian education, in an internal report to the faculty of Austin Presbyterian Theological Seminary, 2008.

[52] Badke, "From Broker to Strategist: Notes of a Traveler in the Strange Land of Information 2.0," 8-11.

[53] Yaghjian, *Writing Theology Well*, 91.

[54] Recall that UZTS students sometimes expressed doubt about which websites were reliable. An increased knowledge base would enable students to make more nuanced judgments about the value of information sources. Standard sources at one divinity school or seminary may be considered outside of the mainstream at another.

[55] Different professors, no doubt, would weight each of the four proposed assignments differently. The authors referenced in this paper as experts on research and writing all contend that there is a linkage between initial stages of research (finding research questions, information seeking), the middle stages (drafting), and the final product (what students hand in). As reported earlier in this article, many study participants blanched at the notion that composition involved drafting followed by revision. Our model would tamper both with student use of time and, in many cases, writing methods. By making the relative weight of the first two assignments relatively high, professors and librarians would send a clear message about the value of employing an intentionally segmented process when conducting research.

This model helps students in three ways. First, firm deadlines for each assignment help both pro-planning and pressure-activated students find motivation to engage in research and writing tasks. Thus, the model builds on the study finding that managing time, self-care, and preparing formed a three-theme loop that, in the minds of most students, drove the research process. Second, students serve as a resource for one another. Meeting in groups provides a structure to clarify assignment parameters, give and receive critical feedback, and discover how written words are received by the reader differently than they may have been intended by the author. Students might engage in these actions informally without the constraint of mandating participation in a study group, but they might not. A student working in solitude might well miss insights gained from peer feedback. Group work in staged assignments ensures a depth of interaction that cannot otherwise be guaranteed.[56] Third, the staged-assignments approach provides multiple layers of feedback from a librarian and faculty member to students. Students learn that a research project is a series of interrelated steps and that initial problems may be overcome by alternative strategies (e.g., finding "nothing" on one's topic can be overcome by understanding better how the online catalog stores and indexes information). As students gain new competencies and greater confidence via staged assignments in preliminary courses, faculty in upper-level courses could assign a research paper as a single, large assignment.

Our model increases the visibility of librarians as collaborators with the faculty. Librarians and faculty members openly work together and librarians are named as research mentors. This collaboration is a form of modeling to students. If students observe faculty members working collegially with librarians, students will see librarians as a valuable resource for writing good papers.[57]

Overcoming resistance to change is an important step in introducing any new practice. The model sketched here responds to resistors by working within structures familiar in academic institutions. By incorporating a series of assignments into a course syllabus, the burden of taking up extra time for something new is kept to a minimum, and the something new looks very much like what faculty, students, and librarians already do.

We have argued in this section that, based on study findings, changes can be made to improve the methods that students use to write research papers. Librarians have a role to play in this improvement by teaching information seeking skills, continuing to build relevant on-site collections, and by collaborating with the faculty to teach students how to break down the research process into its component parts, thus achieving "savvy assignment design" that improves student learning.[58] In our view, a focus on increased training for students in finding, retrieving, analyzing, and using information is necessary but not sufficient to improve student research because students conceptualize research as the complex interplay of several themes that move from intention to composition.

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[56] For a review of the benefits of various kinds of peer learning, see David Johnson, Roger Johnson, and Karl Smith, "The State of Cooperative Learning in Postsecondary and Professional Settings," *Educational Psychology Review* 19, no. 1 (March 2007): 15-29. The authors note that as students spend time together, they tend to like each other and "the more they like each other, the harder they tend to work" (21).

[57] Modeling is a key modality of social learning theory. See Albert Bandura, *Social Learning Theory* (Englewood Cliffs, NJ: Prentice Hall, 1977); *Building Academic Success on Social and Emotional Learning: What Does the Research Say?* (New York: Teachers College Press, 2004).

[58] Mardi Mahaffy, "Encouraging Critical Thinking in Student Library Research: An Application of National Standards," *College Teaching* 54, no. 4 (Fall 2006): 325. Mahaffy focuses on devising assignments for undergraduates that explicate ACRL standards for information literacy.

Conclusion: Pursuing the Wenderoth Research Agenda

We began this report by noting that theological librarians know relatively little about how their users actually go about the academic task of research. The research reported here is one attempt, in Wenderoth's terms, "to get beyond anecdotes and inferences" to explore the complex ways in which students conduct research, find information sources, read, and write.[59] All theological schools face requirements to demonstrate that they benefit stakeholders. It is not enough for seminaries to accommodate scholarly individuals and "provide a safe and secure setting in which to exercise their individual callings" either as professors or librarians.[60] Nor is it enough to assert that a library is good because it owns thousands of books or won a design award. Libraries exist to connect users with pertinent information. Our profession needs broad research upon which to build collections, provide apt training in information literacy, and create buildings that help users do their academic work.

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[59] Wenderoth, 288.

[60] Daniel O. Aleshire, *Earthen Vessels: Hopeful Reflections on the Work and Future of Theological Schools* (Eerdmans, 2008), 99.