The differences in information seeking behavior between distance and residential doctoral students

Maria E. Brahme

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Pepperdine University
Graduate School of Education and Psychology

THE DIFFERENCES IN INFORMATION SEEKING BEHAVIOR
BETWEEN DISTANCE AND RESIDENTIAL DOCTORAL STUDENTS

A dissertation submitted in partial satisfaction
of the requirements for the degree of
Doctor of Education in Educational Technology

by
Maria E. Brahme
April, 2010
Cara Garcia, Ph.D. – Dissertation Chairperson
This dissertation, written by

Maria Brahme

under the guidance of a Faculty Committee and approved by its members, has been submitted to and accepted by the Graduate Faculty impartial fulfillment of the requirements of the degree of

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DEDICATION

This dissertation is dedicated to my husband, Richard Cromelin, without whom I would not have been able to complete the research and writing of this project. Thank you for ensuring that I always had the resources I needed to persevere, for never questioning the importance of the work, and for forbidding me to feel guilty as I pressed forward. (I did disobey this stern directive from time to time.)
ACKNOWLEDGEMENTS

A dissertation is not completed by the student alone, my dear friend, Michael Bell, wisely pointed out at many junctures of this experience. This project would not have reached completion without the assistance and support of a number of individuals.

I acknowledge my wonderful chairperson, Dr. Cara Garcia, for mindful and patient assistance. Dr. Laurie Walters, my fantastic friend, personal statistician, and tireless cheerleader. The incomparable Dr. Christine Borgman, for challenging assessment invaluable advice.

I acknowledge my parents, Inga and Folke Brahme for unconditional support. Folke unknowingly became a key inspiration for the study, serving as the original distance doctoral student by completing his doctorate at Lunds Univestitet, 1975, after emigrating from southern Sweden to California. Revealing her uncanny sensitivity and timing, Inga spoiled me with rewards throughout. Drs. Johan and Sevil Brahme, my beloved brother and sister-in-law, helped me keep perspective. My children, Jesse and Susannah, (and Josie) may never know how their lively, dear presence motivated me every day.

Friends and colleagues were essential sources of support, cheer and unwavering understanding: Michael Bell, Julie Berberian, Yolanda Kenney, Sharon Lalla, Melissa McCarty, Gina Meister, Patty Richmond, Laurie Walters (again).
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ABSTRACT

Librarians have historically been responsible for the organization and management of the stores of human knowledge, and for ensuring information literacy among researchers. In recent years, however, librarians have become disintermediated (Boyd-Byrnes & Rosenthal, 2005) or, removed from, researchers and the research process for a variety of reasons.

The problem that was addressed in this study is that librarians do not have sufficient information about the research practices and preferences of doctoral students enrolled in distance programs. The purpose of this study was to gain information about the differences in research behaviors and preferences among doctoral students in distance and residential programs.

The researcher conducted a qualitative case study using a grounded theory approach. This investigation employed non-probability sampling strategies, convenience and purposive, to identify participants. Semi-structured interviews were conducted with twenty doctoral students; 10 enrolled in a distance program, and 10 enrolled in a residential program. All participants were either actively engaged in gathering material for, or had recently completed, their dissertation literature reviews. In order to arrange equal interview format options for all student-participants, they were allowed to choose whether to be interviewed via phone, via a communications software package called Skype, or utilizing an Internet chat facility called TappedIn. Interview transcripts were coded and analyzed using HyperResearch software.
The current research showed that distance continues to distinguish the research experience for doctoral distance students despite the ease of access to electronic research resources. The simple fact of their separation from the physical campus, from colleagues and faculty while conducting literature reviews causes distance students to feel isolated and to long for academic amenities unavailable to them. While residential students eschew the campus library, preferring to conduct research from the convenience of their homes, distance students express longing for the traditional brick and mortar facility. Findings also revealed that distance students communicate a lower level of self-confidence about their research skills than residential students, despite the fact that their interviews communicated no differences in familiarity with the various available research tools between the two groups.
Chapter 1: Introduction

“The changing nature of the library may be a touchstone for the changing nature of the university itself” – Duderstadt, Wulf, and Zemsky (2005, p. 39).

Introduction to the Problem Statement

Recent statistics show a dramatic reduction in the use of libraries and in consultations with librarians for research assistance (Kyrillidou, Young, & The Association of Research Libraries, 2006; Zabel, 2005; OCLC, 2002). Meanwhile, the research environment has become both more complex yet, paradoxically, easier to use than ever; the labyrinthine Internet offers a wealth of answers to queries with a minimum of effort in a matter of seconds (Brownlee & Ebbers, 2002), while just as quickly producing a “lost” or “overwhelmed” feeling among information seekers. As a result, there is a critical and continuing need for the ongoing training and education of researchers (Cook, 2006).

Librarians have historically been responsible for the organization and management of the stores of human knowledge, and for ensuring information literacy among researchers. In recent years, however, librarians have become disintermediated (Boyd-Byrnes & Rosenthal, 2005) or, removed from, researchers and the research process for a variety of reasons. Jerry Campbell (2006), former Dean of libraries at the University of Southern California, observed that “today the library is relinquishing its place as the source of inquiry” (p. 16).

The number of students in distance programs has increased tremendously in recent decades (Summey, 2004; Boyd-Byrnes & Rosenthal, 2005). By definition
removed from access to the physical university campus and the academic community, this is the group of students with which librarians have the least contact. Distance programs include doctoral level degree programs that demand the most exhaustive and sophisticated level of research. It is imperative that librarians gain a thorough understanding of the research practices and preferences of doctoral students in distance programs.

Problem Statement

The problem that was addressed in this study is that librarians do not have sufficient information about the research practices and preferences of doctoral students enrolled in distance programs.

Background of the Problem Statement

Patron extinction. In recent years academic librarians have observed a dramatic reduction in the number of questions asked at reference desks (Grossman, 2006; Davis, 2003, OCLC 2002). Statistics published by the Association of College and Research Libraries (ACRL), a division of the American Library Association, indicate that transactions began to decline in 1998 and have decreased each subsequent year (Zabel, 2005). The ACRL data is supported by a 2005 study conducted by Online Computer Library Center (DeRosa & OCLC, 2005) that found most college students, 66%, visit the library only once annually, or never, to get help from a reference librarian. A variety of reasons for this have been suggested, one of the most obvious being the vast amount of information available directly, conveniently and instantly to individuals via the World Wide Web (Barry, 1997; Duderstadt et al., 2005; Tennant, 2000).
Library websites. Many of the library resources formerly accessible only in the physical library can now be found on libraries' websites via any computer equipped with a link to the Internet. Researchers today can log into the library research databases from their homes, offices or even local coffee houses offering wireless access. A great portion of the articles cited online are, additionally, available in full text or PDF formats, providing scholars instantly with a version of the articles that is equivalent to a photocopy of the original print source.

University Library websites, furthermore, are typically designed to enable users to locate the information they seek without requiring assistance from a librarian. Equipped with help screens, online tutorials, Frequently Asked Questions (FAQs) and other forms of instant problem solvers and troubleshooting aids, library web pages aim to empower students and faculty to conduct research unassisted in practically any location during any time of the day or night (Adams & Cassner, 2002). Should users still require help, consultation with librarians is often available, as well, on the website via email or chat formats.

Virtual reference software, also used by many libraries, offers more complex online assistance, including the co-browsing and pushing of web pages in combination with a chat function. A small minority of college students, 17%, report using the online librarian question service with regularity (DeRosa & OCLC 2005). Reported findings did not indicate if these are the same students as those who go to the library to seek help with research.
Despite librarians’ efforts to bring the complement of library services to the web – and to library users - in a convenient and cognitively appealing package only 2% of college students begin an information search at a library website. Since fewer students visit the library in person, knowledge about their needs is limited (OCLC, 2002).

Resources on the web. The Internet is rich with resources that can provide information and scholarly material for researchers. University websites often include whitepapers and reports on research conducted by faculty, departments and committees. Often individual departments publish journals that are made available as well. Many faculty members, additionally, list their publications on their individual web-pages and may include links to the full text of articles and book chapters. Trade and professional association websites, likewise, often include links to their publications as well as various kinds of data gathered about their industry.

Online bookstores often provide access to a portion of the text of the titles included on their websites. Amazon, for example, offers the look inside feature that allows customers to view the table of contents and first several pages of the books. Book reviews posted by customers provide further information about the books for sale, as well as recommendations for other readings. Library catalogs usually don’t offer this kind of insight into the actual contents of the books (Breeding, 2007). Indeed, the DeRosa and OCLC (2005) study revealed that students will search Amazon before looking at a library catalog.
Blogs, or web logs, also offer a wealth of freely accessible information. Virtually anyone with basic computer skills can start a blog, or contribute to existing ones, including precocious pre-teenagers and sophomoric high schoolers. Additionally, blog contents entirely escape professional editing as well as the rigors of academic peer review. However, many are authored by professionals in various fields, such as politicians, academicians, and other highly regarded authorities. Furthermore, blogs often are institutionally sanctioned, and serve as official news and events communiqués for professional organizations, university departments, and other comparably significant enterprises. Many libraries, for example, include blogs on their websites to inform patrons about library events, new book acquisitions, awards, professional appointments, and more.

*Ask the Expert websites.* Ask the Expert websites both complicate and enrich information seekers' options online. Ask Jeeves, now called Ask.com, was launched with great success in 1996. In November, 2001, the Nielsen/Net Ratings listed Ask Jeeves among the “Top 25 Web Properties” (Brownlee & Ebbers, 2002, p. 84). This website, which essentially is a natural language search engine, became popular among children as well as adults as an authoritative source of information and answers to questions in any discipline and any level of complexity. Early in 2000, Ask Jeeves received more than 2 million questions per day, a figure that topped public library reference questions for the entire United States by 70% (Coffman, 2000, p. 66). Numerous other websites appeared around this time, and are available to this day, offering advice and
information from so-called "experts" in specific professions or thematic areas. The themes of assistance available range from baby, pet and orchid care to legal and even psychological advice, respectively. Expert training or education is, in some cases, explicitly described (e.g. law degrees) but on other sites only vaguely suggested. At the Allexperts website, for example, anyone can register as an expert in any area, however, verification of expertise is not required (Bivens-Tatum, 2001).

Google. In addition to library websites there are, of course, many other information sources available to individuals conducting research online. In addition to the scholarly material available via library research databases, full text articles from peer reviewed literature as well as varieties of other research resources can be found on the Internet via a simple Google search. Far and away, search engines are the favorite tools among college students searching for information (Barrett, 2005). Eighty-nine percent of college students surveyed in the DeRosa and OCLC study mentioned above reported a preference for using search engines when conducting research. Though other web search engines offer similar features, Google is the clear favorite among student researchers.

Google Scholar offers access to academic research material without requiring a password or login, and its command line search box is both uncomplicated and familiar. A simple search in Google will easily produce tens of thousands of hits, a fact that some library professionals believe may make students searchers feel successful. This concerns some librarians, however, who recognize that a large search return usually is an indication of a search statement that is too broad, or
has low precision. Other librarians worry that large search returns may frustrate researchers, generating a feeling of "information overload" (Scott & O'Sullivan, 2005; Hisle, 2005; Bell, 2005). Studies in information seeking behavior that have focused on the emotional experience of the searcher have shown that feelings of uncertainty and confusion consistently are present in the process (Kuhlthau 1993; Wilson, Ford, Foster, & Spink, 2002).

Another drawback of using Google, which may not seem problematic to student researchers, is that it is not clear what research material is included in, nor excluded from, this file. Whereas library databases, such as Proquest's Research Library or EBSCO's Academic Search Elite, offer detailed information about journal titles included as well as specific years and months covered, Google offers no comments concerning the sources it searches (Bell, 2005). In support of these concerns Brown (2001) observed that the web lacks organization and regulation of its content, qualities that would encourage and enhance its scholarly utilization.

Michael Gorman views these problems far-reaching in terms of impact on research and scholarship, "The emphasis on a quick search and the retrieval of nuggets of information defies the thoughtful process of the scholarly tradition and libraries' role in preserving and providing access to the human record of knowledge" (cited in Plosker, 2006, p. 50).

Despite its several disadvantages, Google is favored by students as a research tool (Hisle, 2005; Breivik, 2005). It is no exaggeration to say that most student research projects begin with a Google search" (Plosker, 2006, p. 50).
Furthermore, Abate’s (1998) doctoral research showed that student researchers will turn to the web when frustrated or unsatisfied with resources offered on library websites.

Disintermediation. Library patrons’ ability to find resources on the web without the assistance of a librarian has resulted widely in the elimination of librarians from the research process, a condition generally referred to as disintermediation (Zabel, 2005; Baker, cited in Bell, 2005; Boyd-Byrnes & Rosenthal, 2005; Macauley & Cavanagh, 2000). Even library websites have been blamed for the decreased contact librarians now have with their constituents; ironically, as a result of librarians’ efforts to create independence for patrons, they now have less contact and therefore less information about the evolving needs and research practices of the individuals libraries aim to serve (Atlas, 2005; Cockrell & Jayne, 2002). Aside from the convenience of remotely available resources, Isaacson (2002) suggests that students may prefer interacting with technology rather than actual librarians. This perspective finds some support in library anxiety research discussed in chapter 2.

Library catalogs and databases are hard to use. Another cause for student researchers to turn away from library resources could be that library catalogs and databases are more difficult to use than freely accessible search engines such as Google and Yahoo (Breeding, 2007; Prabha, Connaway, Ozlewnski, & Jenkins, 2007; Holiday & Li, 2004; Novotny, 2004; Borgman, 1986, 1996; OCLC, 2002). Kalbach (2006) suggests that one of the reasons for this is
that databases were designed to accommodate the data rather than the needs of the potential user.

The literature is rich with acknowledgements and admissions by library professionals that many of the library database search protocols are complex and demanding. Additionally, these search procedures typically vary from database to database, requiring researchers to learn a new approach for each electronic tool. Some librarians consider this fact unfortunate and problematic, suggesting that the database search mechanisms can and should be improved – at least visually - by simplifying the search protocol (Breeding, 2007; Prabha et al, 2007; Novotny, 2004; Baker, cited in Bell, 2005). Others feel that such modifications would be equivalent to “dumbing down” research tools, and that patrons can and should be taught how to handle the challenging aspects of database searching (Bell, 2005). Whatever the outcome of this continuing discussion, implications are that library users continue to need assistance or training in order to use research databases effectively.

*Dissonance.* Another explanation for the decreasing number of patrons in libraries was offered in a report of an earlier study sponsored by OCLC. *The 2003 OCLC Environmental Scan: Pattern Recognition* identifies and describes issues and trends impacting libraries. This document issued the following warning to the library profession, “it has become increasingly difficult to characterize and describe the purpose of using libraries” … “trends indicate a dissonance between the environment and content that libraries provide and the
environment and content that information consumers want and use” (DeRosa, Dempsey, Wilson, & OCLC, 2003, p.ix).

Current usage and preferences. As a follow-up to the 2003 Environmental Scan OCLC issued a report from the 2005 study, mentioned earlier. This publication was entitled Perceptions of Libraries and Information Resources (DeRosa & OCLC, 2005). This document described the findings of a study, referred to earlier in this paper, which examined the roles libraries and librarians play in the infosphere from the point of view of the information consumer.

When asked to rank preferences in sources of new information about electronic information tools, librarians showed up eighth on the list. After search engines, college students reported the next favored source to be friends, followed by links from web sites (not including library websites), and thereafter teachers. Librarians “preceded only promotions and advertising, advice from family members or relatives and, finally, blogs” (DeRosa & OCLC, 2005, p. 1-20). Though the report broadly concluded that the key problem for users with libraries is a dissonance with lifestyle coupled with an inaccurate perception among patrons of the library “brand,” the only specific reason identified for favoring search engines as information seeking tools is because of speed in the delivery of results.

Students’ technological competence. Many students, particularly undergraduates demonstrate confidence in their abilities to use the Internet and to locate the information they need online. (Tenopir, 2003; OCLC, 2002; Yiotis, 2005) However, studies have shown that they actually have a poor
understanding of the complexity of the electronic research environment (Macauley & Cavanagh, 2000). Barry (1997) cautions that despite the vast amount of information accessible with great ease on the Internet and the multiple forms of online help available, the complexity of the electronic research environment has intensified the need for information seeking skills in order to conduct academic research. Librarians have expressed concern that student confidence may be interfering with their own assessment of needs for assistance in research (Gross, 2004; Lancaster, 1994).

Alternatively, the literature reveals concerns about distance students who tend to be older, and may not have the experience or comfort level with technology demonstrated by younger researchers, suggesting special needs for information skills instruction for this group (Behr, 2004; Brophy, 1995; Carty & Stark, 1996; Dew, 2000). This is particularly problematic for doctoral students who have the greatest need, among student researchers, for information-seeking skills. The requirement to conduct comprehensive and current literature reviews for doctoral-level studies calls for the highest level of research skills (Barry, 1997).

*Delivery of higher education – distance students.* Today academic libraries have many different kinds of patrons to serve. Closely related to lifestyle changes among academic library patrons are changes in the delivery of higher education in the proliferation of distance programs. Enrollment in online classes in the US is increasing by 33% annually. The number of distance students was estimated at 2.2 million in 2002, with approximately 200 schools offering online graduate degrees (Gandhi, 2003, p. 138). Growing populations of students whom
librarians need to serve do not have physical access to the university campus (Casey, Sochrin, & Race, 2002), and therefore do not make use of library resources in person.

Distance students face both exceptional limitations and great advantages in terms of their ability to interact with members of their academic community. Because they are physically removed from the university campus, often by hundreds and even thousands of miles, face-to-face meetings cannot be casually arranged (Keegan, 1996). In the virtual environment, however, opportunities for interaction are profoundly enhanced. Electronic offices can be accessed around the clock; freed from the restrictions and demands of physical travel, meetings can be arranged any day, any time.

Though librarians may have minimal contact with this group of students and faculty, research questions can be submitted to librarians electronically, often in an equally open-ended time frame. Furthermore, virtual reference services, available on many library websites, allow for live response and interaction with librarians around the clock.

Because distance students are highly accustomed to using electronic means of communication one might expect these students to be willing to utilize such services more readily than students enrolled in traditional programs. The 2005 OCLC study of perceptions and uses of libraries did not include distance students among the participant group. The study also did not survey graduate students, who are expected to conduct more intensive, exhaustive and sophisticated research than undergraduates.
Librarians. For several millennia librarians have organized and managed the stores of human knowledge. Librarians have also been responsible for providing access to this material by answering reference questions, helping patrons find resources in the library and by teaching them to conduct their own research via information literacy programs. Many of the tools that today provide the most popular means of finding information, such as Google and Yahoo, were not designed by librarians. Traditional methods of conducting research have all but vanished and Librarians find that they continuously must redefine their tasks, skills and roles as information seeking and storing tools evolve. Recent efforts by library professionals to more accurately align image with role and to more effectively communicate new services and expertise to users have, in some cases, entailed removing the word library or librarian from job titles, librarian education programs, and institutional names (Decandido & Mahony, 1992; Helfer, 2000). In 1999 UCLA’s Graduate School of Library and Information Studies became the tenth program to drop the word library from its program title. The literature does not indicate if these changes have had effects on perceptions among researchers concerning librarians’ competence with or relevance to the research and information seeking process. In 2000 Borgman wrote “in the 1960s and the 1970s, librarians often were asked ‘Why does a library need a computer?’...now the reverse question is being asked: ‘We have the Internet, the World Wide Web, and digital libraries, so why do we still need libraries?’” (p. 169). In order to serve researchers effectively, it is essential for librarians to
understand, how changing lifestyles have influenced information seeking behaviors.

Covi's research. Lisa Covi's 2000 JASIST article, "Debunking the myth of the Nintendo generation" described her research findings which challenged widely held assumptions about communication and research practices among doctoral student researchers. Covi examined doctoral students' training, communication and research practices, particularly focusing on their level of influence on such traditions in their respective disciplines. She described the commonly held view that Nintendo Generation doctoral students helped to transform "research disciplines as they [applied] new electronic communication skills "they grew up with" (p. 1284). In actuality, the doctoral students Covi studied used their work practices to "reinforce existing patterns of work and resource use in their disciplines." These doctoral students modeled their research practices after their advisors' and mentors' habits. The doctoral students in Covi's study were all enrolled in residential programs. It may be difficult for distance doctoral students to model the research behaviors of their advisors and colleagues as a result of their physical separation from these individuals.

Numerous studies of library user behaviors and preferences can be found in the literature, as will be outlined in chapter 2. Reports that specifically investigate information-seeking behavior of doctoral students are difficult to find, however. Though many library user studies provide highly useful information for
librarians, Tenopir (2003) urges librarians to collect data on their own user populations.

_Doctoral Distance Students’ Information Seeking Preferences and Habits._

Because distance students’ classroom attendance and interaction with the university environment is largely virtual, their usage of the library is largely represented by electronic interactions. The OCLC (2005) study showed that 17% of college students use the online librarian question service (p. 2-17).

At the doctoral level students are expected to conduct significantly more substantial and extensive research. Doctoral students, as new members of the academic community are commencing to contribute ideas and discoveries to their respective fields via the process of scholarly communication. Cook and Heath (2001) called graduate students “academics in training.” Jankowska, Hertel and Young (2006) wrote that the library is indispensable to graduate students, and more familiar to them than it is to faculty members. Graduate students have yet to become “full-fledged members of the academy” (p. 67). For doctoral students, making meaningful and valuable contributions depends upon their ability to develop a thorough understanding of the research that preceded their own. It is imperative, for their success as scholars, as well as for the healthy advancement of their chosen discipline that doctoral students develop robust, top-notch research skills in order to access all the material they need to read and understand (Barry, 1997). As a result, one might expect that the usage numbers of online research help services for distance doctoral students would be high, as might their usage of the online library.
Statement of the Purpose of This Research

Findings from a study conducted by OCLC (2003), showed that college students prefer to consult search engines, specifically Google, for research. Many believe that what is found on the web, via a common search-engine is "good enough" (Bell, 2005; Prabha et al, 2007), employing the approach of "satisficing" their information needs. Herbert Simon (1955) coined this term about fifty years ago, combining "satisfy" and "suffice" into "satisfice," to communicate a "good enough" approach.

Doctoral distance students are expected to conduct substantial and exhaustive research, however, librarians have minimal contact with this student population. Covis's (2000) research showed that doctoral students in residential programs model research practices after the practices of their advisors and mentors. This may not be possible for distance students as a result of their lack of access to the physical campus resources and community.

The purpose of this study was to investigate the differences in information seeking habits and preferences of doctoral students enrolled in distance programs and those in residential programs of study.

Significance of the Study

Findings from this study provide valuable information to librarians and to the scholarly community about the research practices of doctoral students. In particular, this research reveals information about what information sources doctoral students prefer to use when searching for information.
In order to serve constituents effectively, librarians need to have a thorough and current understanding of patrons’ research needs, skills, and information seeking preferences and habits. The DeRosa and OCLC (2005) study showed that college students’ preference for librarians as an information source is low. This perspective may or may not transfer to a population of graduate doctoral students, and may not hold equally for students enrolled in distance and residential programs.

As explained above, in recent years librarians have experienced disintermediation from the research process and from patrons. This phenomenon has been well documented in the literature. Academic librarians, particularly, are faced with a growing population of patrons who do not have physical access to the university campus, and are unable to visit the library in person. As a result, librarians have more limited access to and therefore less information about this group of patrons. Meanwhile, research has shown that graduate students need assistance with research even when they have received training in using library databases (Cook, 2006).

As the number of doctoral students enrolled in distance programs grows, these individuals will have increasing influence on their fields and on scholarly communication practices. It is imperative for the academic community to stay attuned to evolving information seeking and research practices of all new scholars, as well as the demands created by the nature of the specific programs in which they are enrolled. Because distance students are a growing population it is increasingly important for librarians to continue to learn about students’
information source preferences. Findings from this study will expand librarians' abilities to serve all doctoral student constituents.

*Research Questions*

1. What are the differences in information seeking behavior and research resources used between doctoral students enrolled in a distance learning program and doctoral students enrolled in residential educational programs?

For the distance learning and residential categories separately:

1.a. To whom do students turn for assistance with research?

1.b. What are the preferred research resources?

1.c. What, if any, are the perceived barriers to consulting with the university librarians?

1.d. What, if any, are the perceived barriers to using library resources?

1.e. What factors influence selection of research resources?

1.f. How do students define success in searching for scholarly materials?

*Limitations of the Study*

Participants of this study who have had contact with the librarian conducting this study may have modified their responses as a result of their familiarity with her. It is possible that participants chose responses they believe the researcher-librarian would like to see since, some questions could have been interpreted as a reflection of the effectiveness of the librarian's work. Creswell (2003) writes that the researcher using a qualitative design “reflects on who he or she is in the inquiry and is sensitive to his or her personal biography and how it shapes the study. This introspection and acknowledgement of biases, values
and interests (or reflexivity) typifies qualitative research today. The personal self becomes inseparable from the researcher-self" (p. 182).

The applicability of the findings from this study could also have been limited by the specific participant group. Pepperdine University is a private institution and student characteristics may differ from those of students enrolled in public university programs. Additionally, certain limitations are associated with the non-probability sampling approach. Findings from such a study, for example, are not generalizable to a greater population. This approach may be appropriate, however, when investigating a specific population (Henry, 1990).

Definitions of Terms

For the purposes of this study, the following terms are defined:

• Academic library “...an entity in a postsecondary institution that provides all of the following:

  • An organized collection of printed or other materials, or a combination thereof.

  • A staff trained to provide and interpret such materials as required to meet the informational, cultural, recreational, or educational needs of clientele.

  • An established schedule in which services of the staff are available to clientele.

  • The physical facilities necessary to support such a collection, staff, and schedule” (Carey, Justh, & Williams, 2003, pp. 4-5).

Disintermediation – “Bypassing of librarian intervention in research as a result of the growth of self-directed remote-access search systems” (Boyd-
Byrnes & Rosenthal, 2005, p. 216). Also defined as, "The act of bypassing information intermediaries in the age of ubiquitous information retrieval systems." (Downie, 1999, para. 1)

Distance education – “planned learning normally occurring in different place from teaching and incorporating special techniques of course design, specialized instruction techniques, and special methods of communication” (Moore & Kearsley, 1996, p. 2).

Distance student or distance learner – Student enrolled in distance education program.

Information literacy - Information literacy is a set of abilities requiring individuals to "recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information." (Presidential Committee on Information Literacy, 1989, para. 3)

Information seeking - “a conscious effort to acquire information in response to a need or gap in your knowledge” (Case, 2007, p. 5) “Whenever information is actively sought, issues of relevance, pertinence and salience arise. ‘Context’ – a person’s situation, background, and environment – partly determines one’s perceptions during information seeking. Context will affect the choice of sources that are attended to and meanings that are derived” (p. 115). In the present study, context can be understood as distance versus residential student.

Scholarly communication - “…the processes by which scholars communicate with one another as they create new knowledge and by which they
measure its worth with colleagues prior to making a formal article available to the broader community" (Association of College and Research Libraries, 2007, para. 1)

Search engines – A search engine is an online tool that allows information seekers to enter keywords that are "run against a database of millions of pages, most often gathered by automated 'robots' or 'spiders' resulting in very broad and often overwhelming search results (Pepperdine Libraries, 2006, para. 1).
Chapter 2: Review of the Literature

Outline of Literature Review

This chapter presents a review of the research literature pertinent to the investigation of research habits and practices of doctoral students enrolled in distance programs. In order to build a thorough understanding of the background research and, as a result, the need for this study, literature in a number of different areas is described.

The history of research in information-seeking behavior is briefly overviewed. Literature on information seeking is substantial, spanning an entire century and has been studied in many contexts. In addition to investigations related to academic research, behaviors among individuals gathering information for betting on horse races (Case, 2002) and in seeking information about cancer (Johnson, 1997), for example, also fall within information seeking research. Because of the breadth and depth of research in this area, only literature that relates directly to the research questions for the present study will be discussed in this chapter. Because the tools available to conduct research changed profoundly with the advent of the World Wide Web during the mid 1990s, the majority of literature examined for this review was published after this time. Earlier research will be discussed mainly in order to provide background perspective as well as historical and theoretical context. It is, additionally, necessary to include earlier studies in the literature review because, as Barrett (2005) observes, "most studies of the information-seeking habits of humanists were carried out before the widespread influence of the Internet in the 1990s" (p.
This fact further argues for the necessity to conduct a current investigation of this group of researchers. The literature reveals a mere sliver of research related to the specific question “To whom or what do researchers turn for assistance?” The scarcity of studies on this topic signals a need for the present study.

In contrast to the paucity of reports on information-seeking assistance preferences, research abounds in the area of library user studies. This literature will be tremendously helpful in describing significant behavioral differences between various types of library users and information seekers. Although this literature is vast, gaps exist - particularly in relation to the study presently proposed - and will be highlighted in this review.

A description of the state of library services offered to distance learners will help create an understanding of the many issues facing these students when conducting research as well as the concerns faced by librarians who endeavor to provide services to these patrons. An examination of library user studies conducted specifically on distance learner populations provides important further insight into the needs and challenges of this population.

Finally, a review of the state of today’s research environment focused on outlining issues in the complicated area of scholarly communication will paint a picture of the complexity of the world of research literature. As described in chapter 1, a vast and varied amount of information is freely available via the Internet today. However, a great deal of important scholarly literature is not.
Additionally, the research environment is highly dynamic; formats and availability continue to change confounding even expert information seekers.

The literature reviewed in this chapter aims to demonstrate the many factors that create a need for assistance among scholars when conducting research, particularly when removed from the campus

Restatement of the Research Questions

1. What are the differences in information seeking behavior and research resources used between doctoral students enrolled in a distance learning program and doctoral students enrolled in residential educational programs?

For the distance learning and residential categories separately:

a. To whom do students turn for assistance with research?

b. What are the preferred research resources?

c. What, if any, are the perceived barriers to consulting with the university librarians?

d. What, if any, are the perceived barriers to using library resources?

e. What factors influence selection of research resources?

f. How do students define success in searching for scholarly materials?

Introduction

In 1999, Jiao and Onwuegbuzie wrote “The abrupt dawn and fast growth of the Information Age threatens the very existence of the traditional way of teaching and learning in higher education” (p. 141). Librarianship, an integral part of the higher education learning and teaching process, is a profession that has experienced profound change in recent decades, with the remarkable advancements in accessibility and portability of information. Christine Borgman
(2000) observed that library patrons in the past might have wondered why a library would need a computer while today's researchers are more likely to doubt the need for a library because they have a computer and, therefore, the world of information at their fingertips. Campbell (2006) concurs, writing that the impact of digital technology is the cause of libraries' "loss of supremacy" as the providers of recorded knowledge and historical records (p. 16). In fact, many library resources are now available to library patrons remotely. Academic researchers in particular, who need to read scholarly journal articles on a topic they are studying, are often able to get the majority - if not all - of their materials online, without ever setting foot in the library. It is consequently not surprising that libraries, especially academic libraries, have experienced a dramatic reduction in the number of questions asked at their reference desks in recent years.

Additionally, the tremendous increase in the number of students enrolled in distance programs has created a population of library patrons physically and geographically prevented from visiting their university campus library. The literature reveals librarians' concerns about their disintermediation from the research process, "Users have become virtual and anonymous" (Jamali et al., 2005, p. 554) as well as their continuing worry about the information literacy skills among their constituent patrons. Traditionally, the information seekers have been present in the library, enabling librarians to assess their needs and skills live and in person, using passive, observational and proactive, interactive means.

It is evident that disintermediation from patrons causes challenges for librarians both in determining services needed and in delivering those service.
Moreover, Macauley (1999) points out that the loss of live personal contact with librarians actually may be disadvantageous for students, as well, leaving them with less personalized, and sometimes less obvious avenues of assistance with research problems. Macauley also suggests that the ease with which a great deal of electronic information can be obtained can create unrealistic expectations among information seekers in terms of what is available on the Internet.

Compounding the problematic implications of this tendency is the phenomenon identified by Gross (2004) as “competency theory,” which suggests that people who function at a low level of skill “lack the metacognitive ability to recognize their own incompetence.” Instead of seeking assistance with tasks such individuals, Gross suggests, will overestimate their own level of competence and proceed in their endeavors with false confidence. Clearly, this perspective offers further reasons for concern among librarians about their researcher patrons who are geographically and temporally distanced from the campus environment.

Though the bulk of studies conducted on information literacy and library skills instruction have focused on undergraduate research competence, of particular concern to the academic community are doctoral students who need to conduct exhaustive, scholarly level research in preparation for conducting empirical studies for their dissertations. Distance doctoral students, furthermore, require access to a comprehensive research collection yet may reside hundreds, even thousands of miles away from their university campus and all of its resources.
This study investigated the differences in information seeking behavior of doctoral students enrolled in distance education programs and those enrolled in residential programs of study.

*Information Seeking Behavior Research*

The study of information seeking behavior is essential to librarianship because this research helps librarians understand and anticipate behaviors and needs of patrons, and consequently develop systems and services that most effectively serve their patrons. In his comprehensive book, *Looking for Information: A survey of research on information seeking, needs and behavior*, Donald Case (2002) explains that some of the earliest studies on the topic, published about a century ago, focused on the use of library materials and institutions rather than behavior of the information seeker. Case credits Charles Eliot with the first study of information use in 1902; Eliot wrote about the used and unused portions of a library’s collection (Case, p. 220). Only a few studies appeared during the first few decades of the twentieth century, however post WW2, during the 1950’s and 60’s, the number of studies increased dramatically. Literature reviews of the topic began to appear at this time reflecting the surfeit of research.

Marchionini, Dwiggins, Katz, and Lin (1993) outlined four factors that influence different types of online browsing techniques. These points include the object sought, individual searcher characteristics, the purpose of the search and, finally, the context for conducting the search including collection size, subject divisions, subject discipline, display and work activity. This framework informs the study
proposed in this paper. All four factors are key elements that uniquely characterize the proposed participants' environment and conditions.

The object sought by education doctoral students is scholarly research. The purpose of the information search for participant students is to compose a thorough literature review in preparation for a doctoral level empirical study. Individual searcher characteristics include, briefly, that the participants are doctoral level researchers, expected to conduct the highest and most exhaustive level of academic research. One might surmise that because they are distance students, employing electronic learning tools, they are most likely technologically savvy. As mentioned earlier, some researchers have expressed concern, however, that because distance students tend to be older they may not have the experience or comfort level with technology demonstrated by younger researchers (Behr, 2004; Brophy, 1995; Carty & Stark, 1996; Dew, 2000). Additional traits are discussed later in this chapter.

Finally, the context in which they are conducting research is, first and foremost, exclusively in the virtual library, as they do not have access to physical campus resources. Their discipline, education, falls in the humanities and is a low-paradigm field of study. Disciplinary differences have shown to influence information-seeking behavior and are presented later in this chapter.

Kuhlthau (1999) conducted research on the perceptions of uncertainty and complexity in the information seeking process. Uncertainty was manifested by heightened anxiety and a sense of being overwhelmed. Interestingly, Kuhlthau found that the expert in her study expressed less tolerance of uncertainty than
the novice. This has important implications for the possible existence of differences in information seeking behavior between novice researchers, such as students in undergraduate or master's programs, and doctoral level students. Kulthau's discovery suggests that doctoral students, representing more expert researchers, could potentially experience frustration more quickly or easily when seeking information as a result of not finding the material they need. As a result, the question is raised: To whom or what do distance doctoral students turn for assistance when experiencing this frustration.

To whom or what do students turn for research assistance? (Research on students seeking assistance)

Though the literature is rich with studies of library user behavior, there are few reports that profile to whom individuals turn for information seeking assistance when not consulting libraries or librarians. An important collection of studies, however, that provide insight into individuals' choices are described below.

In 2002 the Online Computer Library Center (OCLC) conducted a study of library usage preferences of over 1050 college students across the nation. Findings revealed that the majority of students, 61%, preferred to first ask a friend or classmate for assistance with finding information. Over one-third (36%) of students chose to ask their professors or teaching assistants for help, and one in five (21%) reported that they would seek assistance from librarians (p.5). A later, more extensive, study also conducted by OCLC (2005) referred to in chapter 1, revealed the sources, other than search engines, preferred by library
users to learn about electronic information sources. Participants in this study included public library patrons as well as college students and a small number of graduate students. As in the first study, friends were the top choice, indicated by 61% of respondents, thereafter, links found in websites, 59%, News media received 52% of votes, promotions/advertising: 39%, Online news: 38%, Relative: 37%, coworker or professional colleague: 35%, Instant messaging/online chat: 22%, reference from a library website: 15%, teacher: 11%, blogs: 9%, and librarian: 8% (p. 1-20). When narrowed to college students, the top response was still friends, at 67%, links from websites also remained second at 61%, however teachers jumped up to 50%, while librarians also fared better, at 33%.

Some limitations exist in terms of drawing widespread conclusions from the findings of these two studies. Neither of the two OCLC studies included doctoral students, nor students enrolled in distance education programs. Both of these factors likely impact student behavior as well as expectations. Doctoral students have the highest level of need, among student groups, in terms of research resources, significantly distinguishing this population from undergraduates, master's students, and public library patrons. However the 2005 study was conducted online and inquired specifically about preferences related to electronic information resources. This may relate well to tools that are familiar to today's distance students who access the library almost exclusively via the Internet. Yang (2005) and Jankowska et al. (2006) pointed out the importance of a clearly organized “one-stop shop” library website specifically designed for the needs of
distance students since, for these students, the website is the library. Studies have shown that students quickly turn to the World Wide Web when frustrated with library websites (Abate, 1998).

A series of studies examining a condition called Library Anxiety illustrate measurable and quantifiable qualities that can be found among groups of individuals and threatens to interfere with their library use behavior. These studies have been conducted on various populations, including college and graduate level students. Specific factors such as discomfort with the physical library environment and staff may cause individuals to initially consult alternative channels of assistance with research. Of course, distance students by definition are removed from the campus environment and, in the specific case of library anxiety, this may be an advantage, as they wouldn't have opportunity to experience discomfort with the physical library facility. However other forms of anxiety generated by their particular limitations may uniquely plague distance students.

Macauley and Cavanagh (2002) pointed out that students' faculty advisors frequently assume that graduate students already have mastered appropriate level research skills, in effect discouraging students from seeking out assistance with research skills from the faculty and possibly from librarians as well. Butler's observation from a few years earlier (1997) that faculty serve as students' main source of information about the library suggests further tension for student researchers. Students might surmise that librarians, as well, expect them to
possess familiarity with information seeking tools and methods. In fact, Barrett (2005) points out reluctance, among graduate students to ask for help.

In 1991 Jaggers, Tallman and Waddell conducted a study of research resources preferred by distance students at Northern Arizona University. Findings revealed that they preferred to use material provided by their instructors, followed by personal collections (68%), thereafter, local schools (62%), and finally, community college libraries. Students' preference of non-library research materials in this study is consistent with responses to other studies of American distance students' library usage and preferences in the late 1980s and 1990s. Kascus and Aguilar's 1988 investigation of faculty and students at ten off campus sites, for example, showed that students make minimal use of their university's libraries and services. In support of this data, as mentioned earlier, Dew (2000) found that distance students were unwilling to drive more than 50 miles to utilize a physical library for research purposes.

Since these studies were conducted, however, the research environment has changed dramatically with the global accessibility of networked electronic information via the Internet. In fact, Liu and Yang (2004) wrote that the evolution of information technology has eliminated the limitations of physical distance, and suggest that student research habits should be revisited.

Library User Studies

Librarians have long relied on user studies to provide valuable information about library patrons' behaviors. The first library user surveys were conducted in the 1920s (Dew, 2000). Seiden, et al. (1997) observe that the knowledge base
related to user studies is extensive; "A cursory literature review reveals over 1500 articles" on the topic (p. 2). Two years prior to the publications of the findings from the OCLC study of library patron perceptions and preferences described in chapter 1 Carol Tenopir prepared a report for the Council on Library and Information Resources (CLIR) entitled Use and Users of Electronic Library Resources. Jamali, Nicholas and Huntington (year) called Tenopir's report, which summarized more than 200 research publications focused on the use of electronic library resources, the "most recent and comprehensive review of the current state of electronic resources and users. “The purpose of this report,” Tenopir wrote in the introduction, was to “help librarians identify reliable research studies, to provide a synopsis of the good studies, and to present an analysis of conclusions on how people use electronic research resources” (p. 1). Consistent with the focus of this literature review, the studies profiled in the CLIR report were all conducted after 1995 - as Tenopir remarked – “in the post-web world” (p. 2). Most relevant to the current study are the findings from the 200 plus reports describing library patron characteristics that influence behavior and consequently patrons' decisions in seeking research assistance. Participants in the studies were predominantly from the higher education community but also included professionals in various research-dependent fields, public library patrons and high school students.

A key finding revealed in the studies analyzed by Tenopir was that there is not one typical library user. As a result, she cautioned that library-specific differences make it beneficial for many libraries to collect their own data, offering
further support for the current study. The research showed, however, that library
users can be segmented into groups; behavior differences can be influenced by
factors such as status, subject discipline, task, type of institution, and age. The
factors relevant to the present study are elaborated below.

Status Differences

Status differences in Tenopir's report refer to educational degree or position,
for example: faculty, graduate students, or undergraduates. The literature, in
addition to the over 200 studies assessed by Tenopir, reveals ample evidence of
significant differences in information seeking behavior between these groups of
researchers, indicating the value, as suggested by Tenopir, of studying the
behaviors of individuals in such groups separately. Similarly, Kushkowskii,
Parsons and Wiese (2003) in their longitudinal citations analysis study of
Master's and Doctoral theses at the University of Iowa, found significant
differences in the reference lists of theses completed by doctoral and master's
students. Another citation analysis study, published that same year, conducted
reviewed citations of undergraduate student term papers at Cornell University
over a series of years (Davis, 2003). Findings illustrated undergraduate
students' increasing preferences for the use of networked information sources.

Likewise, Holliday and Li (2004), OCLC (2005), Hisle (2005), and Plosker
(2006) observed that high school students and undergraduates turn to the web
first for research. In accordance with those findings, Seiden et al. (1997),
furthermore found that undergraduate students rely upon the web to the
exclusion of other resources. The authors additionally expressed concern about
the heavy use of class websites, many of which include direct links to library resources. This approach threatens to interfere with students’ opportunities to improve information literacy skills by relieving them of the challenge of finding the material in the research databases on their own.

Nicholas, Huntington, Jamali, and Watkinson (2006) observed differences in the use of digital scholarly documents between undergraduates and professors. Furthermore, Tenopir (2003) learned, from the studies she examined, that undergraduates and high school students demonstrate a markedly greater degree of confidence in their searching skills than other users.

In conclusion, this section on differences in research behaviors based on status differences reveals that a preponderance of studies have been conducted on undergraduate students. However, Barrett (2005) and Jankowska et al. (2006) point out that the number of studies on graduate student research is small.

**Discipline Differences**

In terms of subject discipline differences, there is ample evidence in the literature of the importance of conducting studies on researchers examining narrow subject areas. Cole (2000), Kushkowski, Parsons, and Wiese (2003), Tenopir (2003), Talja & Maula (2000), Bates (1998), Covi (2000), Liew & Ng (2006) established that important field differences persist in research behaviors and search strategies between scholars working in different disciplines. Some specific differences that have been pointed out include Carol Tenopir’s (2003) observation that while scientists and business faculty were early adopters of
electronic journals and read from a variety of full-text databases and e-journals, social scientists and humanists use both electronic resources and print, relying more on books than researchers in other fields. Kushkowskii, Parsons and Wiese (2003) observed that graduate students in the natural sciences cite more journal literature while social scientists and the arts and humanities cite more monographic literature. Talja and Maula (2003), citing the earlier work of Case (1991), furthermore, suggested that studies of scholarly information seeking practices should be conducted with narrower units of analyses than the general "humanities" designation. In another example germane to the study proposed in this paper, Tunon (2002) writes, "Education students are not very information literate...and that includes doctoral students" (p. 1). In fact, studies such as those by Cole examining the particular research needs of history doctoral students that guide research strategies, and by Liew and Ng (2006) identifying information seeking habits of ethnomusicologists support Talja and Maula's observation. Charles Cole (2000) studied 45 history doctoral students enrolled at six universities in England who specifically needed to collect names from archival materials such as shipping records. This data was only available to researchers in library special collections departments. As a result, conducting research in this highly focused area of British history requires physically traveling to the specific sites that collect and make such records available.

Other characteristics of research materials in different subject areas that can influence search strategies include domain size and the degree of scatter (Bates 1998). Mote (1962) defined low scatter fields as those in which "the underlying
principles are well developed, the literature is well organized, and the width of the subject area is fairly well defined" (p. 170). Bates (1996) added that high scatter fields encompass a greater number of different subjects and the “organization of the literature is almost nonexistent” (p. 156). Interdisciplinary studies, such as ethnic studies and women's’ studies, can be categorized as high scatter since the relevant literature can be found within many of the traditionally identified social sciences. Bates discussed how research in interdisciplinary fields can become much more time consuming than in traditional disciplines because many more resources need to be consulted.

Another disciplinary characteristic that can influence how research is conducted relates to whether the discipline can be described as high paradigm or low paradigm (Covi, 2005). High paradigm fields can be described as disciplines with high degrees of ideological and methodological consensus, such as the physical sciences; low paradigm subjects have ideological and methodological dissention, for example, the social sciences (Zaugg, 1990).

Enthusiasm & Confidence

There is evidence, that younger users are more enthusiastic adopters of electronic resources than are older users (Tenopir, 2003; Oblinger & Oblinger, 2006). Studies have revealed that younger researchers rely on electronic resources more heavily and rate themselves more expert in using them than older users. Data also suggests, however, that certain electronic resources may be less appealing to younger researchers than to older, more experienced scholars. In their study of the information seeking behavior of users of digital
scholarly journals Nicholas et al. (2006) showed that undergraduates were less likely to return and revisit digital scholarly journals than professors and teachers. This study furthermore showed that “old university users” penetrated the digital journal websites more deeply (p. 1363).

Closely related to the enthusiasm for new technology demonstrated by younger researchers in adopting new technologies is the high level of technological confidence exhibited by new generations, for example “Echo Boomers” (Valentine, 1993; OCLC, 2002; Oblinger & Oblinger, 2006; Yiotis, 2005). Because these individuals grew up with daily access to technology, they take such tools for granted and do not question their skills. However, the literature shows that confidence with using Google does not necessarily translate to information literacy skills (Seiden et al., 1997; Lancaster, 1994). Scott and O’Sullivan (2005) write that high school students, for example, frequently “have difficulty defining exactly what kind of information they need” (p. 22). Findings from interviews with students revealed, “...many students have not developed the cognitive skills to effectively negotiate hypertext (p. 23).” Seiden et al. (1997), additionally, found that undergraduates have a relatively poor understanding of the information environment, and that the digital library “exaggerates and magnifies this problem” (para. 82). Cook observes, “...students are becoming more confused over which types of resources are acceptable” as a result of the growth of information along with its availability in a range of formats (Cook, 2006, para. 12).
As individuals from the Echo Boomer generation mature and enroll in doctoral programs one may wonder if they will bring with them the enthusiasm and confidence that studies have shown them to demonstrate as high school and college students? Findings from Covi’s 2001 study suggest the contrary, however; the doctoral students in her study adopted behaviors and practices of their academic advisors and mentors rather than introduce innovative technological practices they may have learned from their peers. Macauley & Cavanaugh (1999) acknowledge this tendency among graduate advisors. They note that often the research skills passed on to students are outdated as a result of the advisor’s lack of familiarity with new techniques and technologies. Delamont, Parry, & Atkinson (1997) identify this phenomenon as “pedagogic continuity” (p. 535)

Participants in Covi’s 2001 study were enrolled in residential programs, allowing regular physical access to advisors and instructors and the resources used by them. It is not known if doctoral students enrolled in distance programs would be as strongly influenced by the behaviors of their advisors and mentors since their mutual contact is both drastically reduced and modified.

Library Anxiety

A stark contrast to the enthusiasm for and confidence with technology demonstrated by younger generations is provided by findings from research on library anxiety among researchers. Library anxiety has been defined by Jiao and Onwuegbuzie (1999) as “an unpleasant feeling or emotional state with physiological and behavioral concomitants which comes to the fore in library
settings" (p. 141). Research conducted by Jiao, Onwuegbuzie, and Lichtenstein (1996) suggests that library anxiety can significantly interfere with students' information seeking efforts by hampering their "cognitive processing" in the areas related to organizational and creative thinking, in other words, divergent thinking.

Most research on library anxiety has been conducted with high school and undergraduate students; however, Onwuegbuzie (1997) found that graduate students experience this discomfort as well. Furthermore, almost all studies on library anxiety have focused on students enrolled in traditional programs, utilizing physical campus library facilities. Collins and Veal (2004) point out that adult learners in distance programs face unique challenges related to their lack of access to campus resources. Specifically, Jiao et al. (1996) discovered that the distance between a student's home and the library is a factor that contributes to library anxiety.

In the decade since the study by Jiao, Onwuegbuzie, and Lichtenstein (1996), however, dramatic changes have taken place in students' abilities to access library resources remotely (Liu & Yang, 2004; DeRosa & OCLC, 2005; Campbell, 2006). Today physical distance to library resources may not have as much significance relative to researchers' anxiety levels since most research databases and vast amounts of scholarly literature is available on the internet. As mentioned earlier, Liu and Yang (2004) suggest that the evolution of information technology has erased the limitations of physical distance, and recommend that student research habits should be revisited. Furthermore, research by Mech and Brooks (1995) and Jiao and Onwuegbuzie (1999)
revealed that library anxiety is context specific; students who experience the symptoms are not overly anxious in other settings. Library anxiety may be present among distance students, representing a barrier that interferes with or otherwise influences how distance students seek out information.

As mentioned earlier, Kuhlthau (1999) found that experienced information seekers demonstrate a lower tolerance for uncertainty in the process. Library or research anxiety may, as a result, influence doctoral students' research process since, as a group they, presumably, are the most skilled student researchers.

Although this study will not utilize the specific library anxiety instrument designed to assess this syndrome, a few interview questions will address issues of anxiety for the present investigation.

Convenience

Tenopir (2003) reported that the overarching discovery in the studies she analyzed was that convenience of use has remained the single most important concern for users in terms of accessing information online (p. 45). Studies conducted by Tipton (2000) and Kelley and Orr (2003) reported similar findings. The literature reveals, moreover, that the preference for convenience of use is not restricted to online sources. In a study of student researcher information source preferences at Duke University, Burton and Chadwick (2000) found that 63% of respondents demonstrated a preference for sources that were easy to use and find, regardless of whether or not they were available online or in the library. Van Scoyoc and Cason's 2006 study of undergraduate research behavior at the University of Georgia's electronic library showed that the vast majority of
undergraduates, 75.5% chose to use “other web resources” for their research, followed closely by resources made available by their instructors on WebCT/Class websites (p. 51). Likewise, the principle of least effort prevailed among respondents’ research behaviors in Liu and Yang’s (2005) study of distance students (p. 30).

In order to prevent confusion between the Principle of Least Effort and choosing the “lazy route,” however, Dresang (2005) explained this approach as one that “minimizes the overall work associated with something, both now and in the future” (p. 181). Indeed distance students typically are characterized by factors that illustrate hardworking individuals willing to take on an educational program in addition to professional and family obligations (Dzakiria, 2002; Carty & Stark, 1996; D’Angelo & Maid, 2004; Brophy, 1995).

The literature confirms that a preference for conveniently accessible resources has historically been a key motivator among researchers (Seiden, 1997; Valentine, 1993; Mann, 1993; Stasch, 1994). Dew (2000) found that distance learning students enrolled in an MBA program were unwilling to drive more than 50 miles to find a library. Several studies, moreover, show a preference for electronic journals over print among graduate students even in residential programs (Jankowska, et al., 2005).

As suggested by the findings described above, a significant trend revealed in the studies analyzed by Tenopir includes the fact that people will use high quality electronic resources when they are available. Similarly, Tenopir found that users will read from a greater variety of titles when they are freely and easily
accessible. Use of electronic journals increases every year. Consistent with the Association of College and Research Libraries (ACRL) statistics cited earlier on the reduced number of questions asked at library reference desk in recent years, Tenopir's report observes a decrease in visits to the physical library with the higher use of electronic journals among faculty members, graduate students and other professionals.

Groups Studied/Not Studied

Although the literature available on library user behavior and information seeking is extensive, there is a shortage of reports that specifically examine doctoral students in distance programs. Seiden et al. (1997) observed that the knowledge base related to user studies is very rich; "A cursory literature review reveals over 1500 articles" on the topic (para. 10). Barret (2005) agrees, writing that the research on information seeking habits of college students is plentiful in the literature. Studies on the research habits of graduate students, however, are scarce. Barrett (2005) and Janowska, Hertel and Young (2006) support this observation, noting that the number of studies on graduate student research is small. Even more difficult to locate are studies on the information seeking habits and preferences of doctoral students. Though a few studies indicate that doctoral students are included in the participant group, they are rarely singled out or exclusively profiled. Furthermore, Barrett (2005) discovered that most of the research was conducted before the widespread influence of the Internet in the 1990s" (p. 324).
Likewise, a shortage of empirical research exists on the topic of online learning and student characteristics (Bocci, Eastman, & Swift, 2004; Moore, 2004; Watkins & Schlosser, 2003). Most of the literature available on the topic of online learning describes anecdotal observations and personal opinions (Kerr, Rynearson, & Kerr, 2006). As a result, there is a paucity of empirical research on the information seeking habits of doctoral students enrolled in online distance programs. Cassner & Adams (2004) specifically express the need for empirical research on "the provision of library resources and services to distance learners" (p. 86).

*Library Services to Distance Students*

*State of services.* Distance students represent a steadily growing population of patrons for university libraries to serve. Goodson (2003) writes that the popularity of distance education has been facilitated by trends such as telecommuting and the changing profile of college students are fueling the demand for distance education. Increasingly, adults are working full-time, balancing family responsibilities, and returning to the university to pursue college and graduate degrees. Distance education is also an attractive alternative for working mothers, low-income persons, individuals with disabilities, military personnel, and rural residents (Hansen, 2001, p. 1003). Gandhi (2003) suggests that institutions of higher learning are launching distance learning programs in order to bolster declining enrollments in traditional residential degree programs by catering to the needs of the new profile of students.
Enrollment in distance education courses offered by postsecondary degree-granting institutions almost doubled between 1995 and 1998, increasing from 755K to 1.6 million, and is expected to be around 2.23 million by 2002." (Gandhi, 2003, p. 138). In 2000 the National Center for Education Statistics reported that 91% of public four-year institutions and 50% of all private institutions (a total of 1.6 million students were currently offering or planning to offer distance education programs (Terrell, 2002, p. 346). Indeed, in 2002 Summey and Fisk wrote that distance learning had become commonplace (p. 503).

LaPadua (2003) observed, however, that student support services, such as academic and financial counseling, registration, bookstore and library services, have often been overlooked for this population. She notes that such services are particularly critical for distance learners who face isolation as a result of their often great geographical separation from the university campus environment. Visser and Visser (2000) also point out that there is a lack of empirical research on the design of appropriate support systems for distance learner programs.

Librarians concerned about distance students. Librarians have long observed the growing trend of distance education and voiced concern for the quality and quantity of services offered to this patron population in the United states and abroad (Carty & Stark, 1996). As early as 1986, Keegan identified a number of characteristics of the distance learning environment that have significant impact on the student learning experience, including physical separation from colleagues and the traditional academic environment. Librarians have, likewise, expressed awareness of their own limitations in adequately
serving this population. The lack of live, in-person contact with patrons challenges librarians’ opportunities and abilities of facilitating research and critical thinking skills. First and foremost, librarians must strategize how to teach these skills to individuals they may never see (Casey, 2002; Tunon, 2002; D'Angelo, 2004)

The literature available on library services to distance students is deep and broad (Cassner & Adams, 2004), a further reflection of librarians’ level of commitment to serving these students. There is an entire journal, the Journal of Library & Information Services in Distance Learning, devoted to the topic, the annotated bibliography Library services for off-campus and distance education is now in its 5th edition. Additionally, the bi-annual Off-Campus Library Services Conference, met for the 13th year in 2008 and in 2005, the international conference, Libraries Without Walls: Evaluating the Distributed Delivery of Library Services gathered for the 6th time in Greece. The website for Libraries Without Walls describes the conference mission:

From their beginnings in 1995, the Libraries without Walls conferences have mapped a major change in the practice of librarianship. While library services are still concerned with providing users with physical access to their buildings, electronic access, often from remote locations, is becoming ever more dominant. Papers presented at previous LWW conferences have documented this change and provided examples of how libraries are pushing out the frontiers of their services. Rapid proliferation of DL programs has
tremendous implications for providing library services to distance students
(para 1).

Charles Faulhaber has argued that “distance education without a digital library
is not possible.” As mentioned earlier, Liu and Yang (2005) and Janowska et al.
(2006) pointed out the importance of a clearly organized “one-stop shop” library
website specifically designed for the needs of distance students since, for these
students, the website is the library.

ACRL standards. In 1963 the ACRL first began working on writing standards
for services to distance students, at that time called Guidelines for library
services to extension students (American Library Association, 2010, para. 54). The
guidelines have undergone numerous revisions over the years as library
resources and services have evolved. The most recent iteration, approved July
1, 2008, include the following phrase which effectively captures the
organization’s aim in serving academic distance patrons:

Access to appropriate library services and resources is essential for the
attainment of superior academic skills in post-secondary education,
regardless of where students, faculty, staff, and programs are located.
Members of the distance learning community, including those with
disabilities, must therefore be provided effective and appropriate library
services and resources, which may differ from, but must be equivalent to
those provided for students and faculty in traditional campus settings
Still, library services to distance students at many universities are not often comparable to services for traditional, residential students, posing various barriers for this population to research resources. One librarian observed that because the library does not make distance students a priority there is little time available to serve these students and faculty (Butler, 1997).

Number of distance librarians. Fulfillment of the service guidelines proscribed by ACRL has proven to be challenging in terms of resources for most libraries with distance programs (Brownlee & Ebbers, 2002). The Association of Research Libraries reported, in a 1996 survey, that only six of 43 libraries surveyed had a budget in place for services to distance learners and faculty (Kelley & Orr, 2003). More recently, a study of Library services provided to distance learning students conducted by Liu and Yang (2005) examined the resources made available to students at 62 US ARL libraries. Findings showed that only 13 (21%) of libraries have a full time librarian dedicated to distance students; 22 university libraries, or 35.5%, have a librarian who spends part of their time tending to distance learners. Liu and Yang furthermore reported that only 7 (11.3%) of librarians serving distance students have access to lists of registered distance education students. Lack of awareness of the names of distance students and faculty seriously interferes with librarians’ abilities to promote services to this group.

Collaboration with faculty. Librarians agree that collaboration with faculty is an essential component in the successful delivery of library services particularly to distance students (Macauley & Cavanagh, 2000; Butler, 1997). Fang (2006)
noted, however, "There seems to be a long way to go in working collaboratively with faculty to cultivate students' information competencies in the distance learning environment" (p. 3). Respondents indicate that many teaching faculty do not promote library services to distance students and do not provide feedback to librarians" (Liu & Yang, 2005, p. 94). Moreover, a longtime tendency of faculty and advisors is to not consider it their responsibility to ensure that graduate students obtain information seeking instruction and furthermore assume that students at the graduate level already possess adequate research skills (Macauley & Cavanagh, p. 224). The importance of librarians' close relationship with faculty was further supported by findings from Butler's (1997) study revealing that for many graduate distance students, faculty function as the primary communication link for information about the library. Butler states "students gave their instructors low marks for adequately informing them about library services," further underscoring the need for librarians to improve communication with the teaching faculty (para. 8)

Course management systems. Fang (2006) writes that incorporating the library's presence into increasingly popular course management systems has posed another challenge for librarians. Librarians must seek to integrate their resources into online courses delivered via course management systems. Just as collaborations with faculty become increasingly crucial in successfully providing services to distance students, Fang observed that collaborations with a variety of academic personnel and departments are necessary to integrate the library into systems such as WebCT and Blackboard.
**Students unaware of services.** Historically studies have shown that distance students tend to be largely unaware of library services available to them (Butler, 1997; Kascus & Aguilar, 1988; Azubuike & Greaves, 1989; Washington-Hoagland & Clougherty, 2002; Fang, 2006; Casey, Sochrin, & Race, 2002; Kelley & Orr, 2003). Dillon (2002) and Ault (2002) noted the importance of marketing library electronic resources to both students and faculty. Maughan (1999) wrote that the groups of faculty and graduate students who were the heaviest users of electronic library resources also indicated a need for more library instruction services. Lack of awareness of available library services could easily influence to whom students turn for research assistance.

**Clear website.** Participants in studies conducted by Yang (2005), Jankowska et al. (2006), and Behr (2004) communicated the importance of having a clearly organized, one-stop shop website specifically designed for the needs of distance students since, for these students, the website is the library. If the website is not clear, easy to use and self-explanatory, Yang warned, students will get lost and never return to the library online resources. Liu and Yang’s (2004) study of distance students’ research habits supports this observation, revealing that only 28.8% of students chose their home institution webpage as their primary source of information (p. 30).

**Distance Learner User Studies**

Numerous library user studies have been conducted on distance learners. Mann (1993) observed that users in a variety of settings have historically identified convenience as the primary reason for selecting information sources,
reflecting the information seeking behavior principle of least effort. Likewise, Kascus and Aguilar's (1988) investigation of faculty and students at ten off campus sites showed that students made minimal use of their home university's libraries and services. Subsequent surveys conducted, respectively, by Stasch (1994), Shouse (1995), Cassner & Adams (1998), Unwin, Stephens, and Bolton (1998), Dew (2000), and Tipton (2000) revealed that local libraries, either public or at academic institutions located close to the researchers' homes were utilized more frequently by distance learners and faculty than their home institutions. Convenience was suggested as the primary motivation in the participant's choices.

Alternatively, in her doctoral study of distance learning graduate students at Nova University, Abate (1998) found that when students had difficulty locating the information they needed via library research resources they turned to the Internet as their primary information source. Jaggers, Tallman, and Waddell (1991) found that distance students at Northern Arizona University preferred material provided by their instructors, followed by personal collections (68%) thereafter local schools (62%), and finally, community college libraries.

It is noteworthy that in none of the studies listed above do the ACRL standards for library services to distance students appear to have been followed. The ACRL guidelines state that academic libraries must meet the information and research needs of all constituents, "regardless of where students, faculty, staff, and programs are located. This principle of access entitlement, as applied to individuals at a distance, is the undergirding and uncompromising conviction of
the Standards for Distance Learning Library Services" (Association of College and Research Libraries, 2010, para. 1). In the situations described above, however, it appears as if the institutions in which they were enrolled did not meet students' research needs regardless of their location. Although students repeatedly seem to indicate, when surveyed, that convenience is a major factor in their approach to research, one might argue that the same students, in fact, have been inconvenienced by a lack of accessibility of their home institution library resources. Steven Dew's (2000) survey of off-campus MBA students at the University of Iowa showed that 80% of respondents were unwilling to drive more than 50 miles for library services, however, LaPadua (2003) observes "it is unrealistic to expect that students who do not come to campus for their education will travel to campus to access student services" (p. 120).

Additional challenges may be encountered by distance students who attempt to utilize local libraries. In their article, Pests, Welcomed Guests, or Tolerated Outsiders? Attitudes of Academic Librarians Toward Distance Students from Unaffiliated Institutions, Tunon, Barsun, and Ramirez (2004) described the results of their survey of 107 academic librarians regarding their attitudes towards unaffiliated distance students. Though most respondents communicated a desire to serve even non-affiliates to the best of their abilities, concerns were expressed about the resulting strains on staff and resources. Librarians at smaller institutions, particularly, worried about the appropriateness of their collections, and the library's ability to assist and advise students researching disciplines outside the librarians' realm of expertise. In an earlier article,
Chakraborty and Tunon (2002) reported similar concerns about distance students enrolled in US education programs while living abroad and attempting to utilize local libraries. In addition to not offering resources appropriate for the programs of study, local academic libraries perceived the US institution as a competitor for students and were not willing to extend support to US students.

In her examination of librarians’ responses regarding the needs of unaffiliated users over a period of 50 years, Courtney (2001) observed that librarians often experience conflict. Their instinct tends to dictate a moral obligation to serve all, however, the realities of budget, space and the needs of their own clientele can cause such altruistic perspectives to be unrealistic. This struggle is not new to librarianship; the literature reveals that the debate over the dilemma of sacrificing professional commitment to the free flow of information by restricting services to local constituents reaches back several decades (Bailey, 1961; Waggoner, 1964; Josey, 1969; Kaser, 1974; Mitchell, 1982; Prince & Nelson, 1985; Masters & Flatness, 1985; Heath, 1992; Jansen, 1993; Nicewarner & Simon, 1996; Courtney, 2001). Even the ACRL Guidelines for the Preparation of policies on Library Access recognize the need for necessary distinctions between primary and other users” (1992, preamble section).

State of the Infosphere

As mentioned in the introduction to this chapter, the dramatic changes that have taken place in the research environment in the last decade have profoundly affected how information, including research literature, is made available to scholars and, in turn, how scholarly research is conducted. A good example of
this, described earlier in this chapter, is Tenopir’s (2003) discovery that users will read from a greater variety of journal titles when they are freely and easily accessible electronically. Use of electronic journals increases every year, and the increased availability of electronic journals is directly related to the reduction of reference questions asked at library reference desks.

A discussion of the state of scholarly communication is essential when assessing issues related to academic information seeking behavior. Chapter 1 described how the Internet has facilitated easy access to various kinds of information while simultaneously creating confusion among information seekers. Though vast amounts of information are readily available from any computer linked to the Internet, often causing a feeling of “information overload” among information seekers, there is meanwhile much information that cannot be easily accessed. These “hidden layers” of information on the World Wide Web are sometimes referred to as the “invisible” or “deep” web (Devine & Egger-Sider, 2004). Breivik (2005) writes that only 17% of resources are indexed by any of the most familiar search engines, and only 6% of those are educational or scientific (p. 22). Still, most information seekers, including students and faculty (Devine & Egger-Sider, 2004) are unaware of the limitations of standard search engines. Assuming that “everything is on the web,” it is no surprise that some individuals feel confounded when unable to find material while others may feel intimidated or insecure about their electronic research skills (D’Angelo & Maid, 2004).
Scholarly Communication

"Scholarly communication is in turmoil," wrote Drake (2007, p. 33). Yiotis (2005) agrees, observing that the crisis is a key concern for within the academic and research community. Some of the issues causing chaos in the world of academic research and publishing include open access publishing and implications for peer review, the creation of institutional repositories of journals and articles, the existence of multiple versions of articles, copyright issues, skyrocketing subscription costs for certain key journals, and questions concerning archiving and preservation.

Between 1990 and 2000, average journal subscription fees increased at the rate of 10% annually, resulting in a total of nearly 170%. The Journal of Chromatography is one example of a journal with an atrociously high subscription cost at $13,674 annually (Boettcher, 2006). Frequently the most expensive publications are the ones with the highest impact factor, meaning the journals with the most cited articles and, consequently, publications to which librarians feel obliged to maintain subscriptions. As a result, library budgets have been profoundly challenged in recent years and librarians have found it necessary to eliminate subscriptions to many journals (Yiotis, 2005). Scholars have realized that, in effect, less research material was being delivered to fewer people (Drake, 2007).

The open access (OA) publishing movement was started by author-scholars in reaction, as an effort to regain control over their published material, and to make important research widely and easily available to the academic community.
Many scholars have become involved in OA publishing; as of December 30, 2006, the Directory of open access Journals (www.doaj.org) listed 2,514 journal titles, including 124,046 articles (Drake, 2007).

Regardless of the impact of OA on faculty authors and librarians, the phenomenon has added complexity and ambiguity to the research environment. The ease of access to the body of research literature published in the open access environment could easily mislead scholars into believing that all research reports can be found via a Google search. As a result, they may neglect resources available in the library databases, or invisible web described earlier.

Authors frequently post articles and/or reports of research on their personal websites. These are not necessarily the same versions of the articles as those eventually accepted for publication; such articles may be pre-publication, pre-copy-edited, and pre-peer-reviewed editions. However, researchers who encounter the posted reports may easily assume that they have discovered the sole version of an article while a final, corrected and edited iteration could exist in a research database, print journal and/or institutional repository. The proliferation of institutional repositories is another trend that has both facilitated and complicated the research environment. Often created and managed by university libraries, institutional repositories collect, organize and make available research products of university scholars and departments. The material may range from technical reports on research, pre and post-print versions of articles, data sets, dissertations and theses, digitized special collections, and other types of gray literature. The material included in these digital archives are in some
cases freely accessible to researchers via the WWW, but others are restricted to campus use only (Drake, 2007).

With the many complex and complicated aspects of scholarly communication juxtaposed electronically with overwhelming amounts and varieties of information on the Internet, it is small wonder that scholars should need guidance in conducting research. Distance students enrolled in doctoral programs could likely face the greatest need for assistance with research since they are isolated from colleagues, advisors and campus resources. Additionally, per Kuhlthau’s research findings mentioned earlier, these students are more likely to experience frustration in their research endeavors. The implications for scholarly communication of doctoral level researchers potentially missing out on important studies relevant to their own investigations are worrisome. Researchers could get stuck ‘reinventing the wheel” if their research questions already had been answered by preceding studies that they were unable to locate. On a larger scale, this could amount to a great deal of wasted time and funds, were researchers to routinely bypass substantial repositories of studies and/or research databases. As a result, the progress of science and discovery could be slowed, stymied, or misled.

Google Research Update

The literature review for this investigation was conducted a couple of years prior to the completion of the study. Many changes have taken place in the Internet research environment in that time; Google and its competitors have launched new tools, and the Web is a richer, more complex environment for
researchers. As a result, an update to the literature review, particularly focusing on Google’s evolution, follows.

*Cloud computing.* A free program called Google Docs and Spreadsheets, released in October 2006 (Google Press Center). Google fashioned this package out of an online word processing software called Writely. A small upstart company named Upstartle created Writely in 2005 but was soon purchased by Google. Spreadsheet software was packaged together with the word-processor and it was thereafter introduced on the Web. About a year later, presentation software was added, later Google Forms, and the name was shortened to Google Docs (Nott, 2009). McPherson (2007), was quick to observe, “Google Docs is a far more capable program than presented ... educators have recently begun to discover its potential as a literacy technology (p. 70). Tucker (2009) predicts that with these offerings many users of the future will search, email and do all office work via Google “without ever stopping by Windows” or “saving anything on their hard drives” (p. 12). Called “cloud computing” this approach to data, document and application management and use allows files to be available wherever users have internet access, regardless of what laptop or workstation they are using. “Every computer becomes your computer,” Tucker explains (p. 12). Buck (2009) notes that the collection of web software, or cloud offerings by Google, now known collectively as Google Apps, includes Gmail, Google Calendar, Google Docs, Google Sites and Google Video. A variety of editions are available, as well, specifically tailored to the K-12 & college, home, and business environments, respectively. Some of the formats,
other than the Standard Edition, are available at a monthly cost to users. Amazon Web services also offer similar services, Buck writes, structured for various types of users, also with costs attached.

Despite the fact that competitors to the Google cloud, such as Amazon, exist on the web, Dumenco (2009) describes the cloud phenomenon as the “Google apocalypse.” Dumenco expects that “more and more businesses and individuals are trusting their mission-critical data and applications to Google’s cloud” (p. 13). Dumenco further warns that Google’s cloud threatens to “smother us” in “ways much more systemic and apocalyptic than Microsoft’s desktop software ever did.” Buck (2009) communicates a less alarmed perspective but describes concerns about the software. “Privacy and security issues” could be problematic she writes (p. 8). Ownership of data concerns should also be considered, Buck explains, describing difficulties in moving data from one vendor to a competitor’s resources. Likewise, “users need to know if access to data will be denied if payment is delayed or neglected and if documents that are no longer wanted can be deleted or removed” (p. 10). Hastings (2009) echoes the concerns expressed by Buck and notes that “cloud computing assumes a high degree of trust between the organization and its cloud computing provider” (p. 10).

Web encyclopedias. An additional tool, introduced July, 2008, by Google is Knol, described as a “Wikipedia knockoff” by Hazlett, (2009, p. 47). Helft (2008) writes that Knol is short for knowledge, or “unit of knowledge” (para. 2). Unlike Wikipedia, the identities of Knol article authors are disclosed (Pasachoff, 2008). Peek (2008) observes, however, that authors may verify their identities
via a telephone number or credit card, easily allowing true identity disguise. Unlike Wikipedia contributors, Knol authors may choose whether or not to accept edits of their essays (Peek), and also whether to participate in Google's Adsense program, implying renumeration for usage of their contributions (Pasachoff). Disappointed in the dubious authority of the Knol's experts, and consequent erratic reliability of Knol's articles, Pasachoff warns, "caveat emptor to users about reliability" (p. 14).

An additional wiki-based encyclopedia, Citizendium, was introduced to the Web in 2007 (Peek, 2008). Modeled on Wikipedia, this tool additionally requires expert review of contributions. Citizendium contributors are required to sign an ethics pledge and to provide their real names. The site is policed by "constables," college graduates at least 25 years of age, who ensure that rules are followed (Lapp, 2007).

*The semantic web.* Under much discussion in the literature is the development and potential of the semantic web. Burke (2009) writes, "The semantic web (SW) converts web pages from being readable and displayable by computers to being understandable by computers" (p. 316). Johns (2009) explains that within the SW paradigm computers could "understand the meaning of things you view and search, grasp what they were and how they might relate to each other" (p. 20). This suggests a web that interprets commands and queries in an entirely different way, by assessing the meanings of words and phrases in context. There is much work to be done, however, before this becomes a widely useful tool (Talbot, 2009, Burke). Burke explains that the
project demands both the creation and maintenance of metadata and taxonomies and consequently consumes great time and resources.

Approaching the SW capability, the Wolfram Alpha search engine, a "computational knowledge engine" (Albro, p. 13) released Spring, 2009, provides answers to queries using its own computations and algorithms applied to available online data (Johns, 2009). Though for some requests it has no response at all, Albro writes that it can also offer "deep and complicated analysis" for other questions (p. 13). Instead of scouring the web for pre-existing facts, Wolfram mines the specific databases culled by Wolfram associates (LaVallee, 2009). Performing computations on said databases, Wolfram presents the searcher with "new, original data, instead of links to pre-existing Web pages" (p. B5). O'Leary (2009) clarifies that Wolfram's content is gathered from "hundreds of reference books, textbooks, manuals, handbooks, statistical compilations and databases." Calling Wolfram a "closed, proprietary" system, O'Leary concludes that it is a "black box with proprietary analysis and retrieval technologies" (p. 43). Despite the fact that Steven Wolfram, the brainchild's father and owner of Wolfram Research Inc., intended to create a tool to respond to queries in "truly intelligent" ways (Talbot, 2009, p. 35), there are detractors. Though Wolfram is described by some as posing a threat to Google (Johns, 2009, Bialik, 2009), Bialik writes that, "it is really a bigger threat to calculators" (p. A14). Focused on numbers and computations, a search in Wolfram will not produce articles, essays or any kind of subjective material (O'Leary, 2009). Additionally, the search
engine will not be of help if a user wants to purchase theater tickets, find a cell phone review, or needs to know the source of the data (O’Leary; Talbot).

Google Squared, launched Spring, 2009, approaches the concept in that it seemingly interprets a researcher’s query. Harris (2009) writes that Squared “uses semantic analysis of multiple sources” (p. 16) and presents an answer to the user in tables, with rows and columns (Harris; Albro, 2009). Johns (2009) suggests that Google Squared was a quick reaction by Google Labs to the threat of Wolfram Alpha.

Soon after the introduction of Google Squared, Microsoft launched a new search engine, Bing, on June 3 (Pogue, 2009). Quint (2009b) suggests the “catchy” name was drawn from the phrase “bada bing” (p. 9). Similarly to Wolfram and Squared, Microsoft identified Bing as a “decision engine” (Pogue, p. 92). Its technology built primarily on the former Live Search algorithm (Notess, 2009), Bing aims to “take users through a decision making process toward a successful outcome” (Harris, p. 16). Included in the suite are Bing Maps, Bing Images, and Bing Shopping (Notess, 2009).

Google Scholar. Launched in November 2004 (Hartman & Mullen, 2008), Google Scholar (GS) was introduced as a tool for academic researchers. GS offered access to scholarly literature including peer reviewed articles, theses, technical reports and more via a familiar and simple Google interface (Wleklinski & Ojala, 2005). Wleklinski and Ojala pointed out that GS would not reveal how scholarly quality of its contents was determined, nor the exact size of the
database. Abram (2005) predicted, however, that "It would be naïve to assume that Google Scholar won't grow into a powerhouse" (p. 44).

In the years since its initial release, a growing number of studies have found that GS compares positively, in a number of ways, to traditional academic research tools. "Google is valuable in locating the full text articles cited by engineering faculty," Baldwin (2009, para. 17) found in her study. In order to compare Web of Science, Scopus and Google Scholar, Levine - Clark and Gil (2007) analyzed citations from business and economics journals. In a comparative study of citations from ecology journals, Cristianson (2007) found that GS located more than 70% of the citations,

Meier and Conkling (2008) found that Google Scholar "is a useful tool for accessing engineering literature published in the last ten to 15 years" (p. 201). The authors also discovered that GS found nearly 90% of the items used in a search sample from 1990-2007. "Google Scholar is capturing the records of many of the same publications that can be found in Compendex," they reported (p. 199).

In June, 2008 Howland, Wright, Boughan and Roberts presented a paper entitled "How scholarly is Google Scholar?" at the American Library Association's annual conference. The researchers had discovered that GS is generally superior to individual research databases in retrieving appropriate citations. Their researchers had showed that Google Scholar is, on average, 17.6 % more scholarly than materials found only in databases and that there is
no statistically significant difference between the scholarliness of materials found in Google Scholar across disciplines (p. 233).

Walters (2009) compared the performance of Google Scholar to 11 bibliographic databases, including Academic Search Elite, Article First, EconLit, GEOBASE, MEDLINE, PAIS International, POPLINE, Social Science Abstracts, Social Sciences Citation index, And SocINDEX. Walters' findings showed that for some topics, Google Scholar performed better than the subscription databases in terms of both recall and precision. In an earlier study, Walters (2007) assessed GS against library research databases: Academic Search Elite, AgeLine, ArticleFirst, GEOBASE, POPLINE, Social Sciences Abstracts, and Social Sciences Citation Index. He concluded that the coverage of GS was "comprehensive" (p. 1125) though the records were unsophisticated in appearance.

Investigating the access to articles in ecology, a multidisciplinary field, via GS, Christianson (2007) discovered a clear improvement in the results over recent decades. The author used a random sampling of articles from 1945 to 2005 from journals in Cambridge Scientific abstract's Serial's Source List for Ecology.

Neuhaus (2006) compared GS to forty-seven databases in various disciplines and found GS to be especially strong in science and medical disciplines. Jones (2005), like Walters above, used a simple search to evaluate eight databases (BasicBIOSIS, ArticleFirst, ECO, ProQuest, WilsonWeb, SciFinder Scholar, HighWire and Medline) and Google Scholar as possible alternatives to BIOSIS.
Significantly more results were found in Google Scholar, including more non-English journal articles.  

Comparing GS directly with Chemical Abstract Service’s SciFinder Scholar, Levine-Clark and Kraus (2007) broke down their results by type of resource. Results were not limited solely to journal articles, and were assessed over time with increasing granularity for recent years. The authors reported that GS revealed better performance in the chemistry discipline and offered a “worthwhile substitute” for compounds and personal name searches.  

In terms of journal impact factor data, Google Scholar is also showing promise. Harzing and van der Wal (2009) determined that Google Scholar provided a more accurate and comprehensive measure of journal impact data than did ISI  

*Google Books.* As early as 2002, Google fact finding teams investigated the feasibility of scanning every book ever printed (Stross, 2008). In December 2004, Google announced this project, called the Library Initiative. This endeavor encompassed the digitization of millions of works from major libraries worldwide, with which Google had arranged agreements (Pike, 2005). By 2007, Yahoo and Microsoft had begun similar projects, however Google already had an enormous lead (Stross, 2008). Joint (2009) notes that seven million books had been digitized in four years. Controversies have surrounded the development of this project, better known as Google Books. A copyright infringement lawsuit, also claiming financial damages (Baksik, 2006), was filed by the American Association of Publishers and the Author’s Guild in 2005. A proposed settlement
was announcement in October 2008. Because of the potential impact on libraries and information policy of the highly complex settlement, the American Library Association, the Association of Research Libraries and Association of College and Research Libraries together officially filed their list of concerns in a “friend of the court” brief prior to a May 5, 2009 deadline (Terry, 2009).

The undeniable benefit of having easy access to millions of formerly unavailable books has been acknowledged widely and enthusiastically by information scholars (Baksik, 2006; Keller, 2009, Samuelson, 2009; Grimmelmann, 2009; Quint, 2009a). “I am a diehard fan of Google Books” writes Quint (2009, p. 7). Concerns remain about the resource, however, among information scholars. “If Google is intent on information discovery, why do they not attribute the library or libraries from which the book was scanned?” wonders Baksik. Samuelson notes that the proposed settlement would give Google a monopoly on the largest digital library of books in the world. Negotiated in secret, the agreement “will create two complementary monopolies with exclusive rights over a research corpus of this magnitude” Samuelson points out (p. 30). Similarly, a concern over the privatization of knowledge has been expressed in the literature (Joint, 2009; Kahle, 2009; Grimmelmann). Joint furthermore, decries the inevitable “loss of public knowledge” about the mechanics of information retrieval (p. 339). Regardless of the controversies, the sudden availability of millions of digitized books via Google forever changes the research landscape.
Summary. In the last few years, resources available to researchers on the web have evolved and multiplied significantly. The tools described above may not all necessarily impact the research process directly. They may, however, affect how the modern researcher chooses to conduct research. Jansen, Zhang, and Schultz (2009) examined how brand influences Web researchers’ preferences for and perceptions of search tools. Brand has shown to positively influence usage, “affective and cognitive user perceptions affect user interaction with systems” (p. 1590). In other words, the authors found that participants’ familiarity with Google as a brand led them to experience a higher degree of satisfaction with the search results it offered. Meanwhile, faculty attitudes influence the degree to which Google is used by students to conduct research, and also the extent to which librarians encourage its use and value as a viable scholarly resource. (Sorensen & Dahl, 2008). Student and faculty attitudes about the Web as a research environment continue to demand examination. Librarians, likewise, will need to stay vigilant and well informed about the changes to the Web. It is essential that librarians continue to assess web based research tools as they evolve in order to, in turn, keep researchers well informed.

Conclusion

This review of the literature clearly supports the need for the present study. Importance of research in information seeking behavior is demonstrated by the depth and breadth of the available research in this area. Likewise the fact that library user studies are plentiful in the literature communicates the strong, continuing interest in examining library patron behaviors and preferences among
library professionals. Library user studies have revealed that there is not one
typical library patron. Patrons differ in their needs and attitudes by age, status,
discipline, and type of institution. As a result, it is useful to investigate the needs
of specialized user groups, such as doctoral students enrolled in an Education
distance program. Furthermore, library services to distance learners have been
thoroughly examined and discussed in the literature, indicating the critical interest
among librarians in effectively serving this population. The state of scholarly
communication, heavily impacted by the effects of technological innovations on
the publishing industry has been the subject of heated discussion in the
literature. Librarians' concerns about the quality of research and scholarship in
our age of rapid technological changes providing researchers with profound
convenience in terms of access to research yet disintermediating librarians from
the research process abound in the literature.

A paucity of research was discovered, however, in the area of research
habits and practices of distance students. Furthermore, few studies examined
issues related to research among doctoral students in distance programs.

Covi's 2001 investigation included only students in residential doctoral
programs. She found that participants modeled their research and
communication behaviors on advisors' preferences and habits, thereby ensuring
pedagogical continuity. Doctoral students in Covi's study did not introduce new
technologies or innovative communication conventions with which they may have
been familiar as is generally understood about their generation; the generation
Covi calls the Nintendo Generation. However, this may not be true about
doctoral students conducting research at a distance. Geographically removed from their university mentors, advisors, and colleagues, the influence of their senior researchers may not be as great. Additionally, today's distance doctoral students increasingly are part of the newer Echo Boomer generation. The literature shows that Echo Boomers take technological tools for granted, are enthusiastic early adopters of technology innovations, and do not question their skills.

As a result of these issues, revealed in the literature, it is evident that an investigation of the research habits and preferences of doctoral students in an education distance programs was necessary in order to design services to fit their needs.

Because the participants in this proposed study are, by definition, removed from the Pepperdine campus environment and geographically dispersed from each other, tools that allow for virtual, remote and synchronous communication were utilized to collect data via interviews for the present study. The research methods are described more thoroughly in Chapter 3.
Chapter 3: Research Methods

Overview

This chapter describes the research methods that were used in this study. This is a vital element of a doctoral study as it demonstrates to the scholarly community that the established scientific research method was followed, thereby providing assurance of the resulting data’s integrity. The methodology chapter, furthermore, provides a roadmap for colleagues to follow, should they wish to replicate this study. Accordingly, detailed below are the research approach and design, the participants involved in the study, the instrument and processes used to gather data, as well as the procedures employed to analyze findings. Rationale for the various elements of the research strategy chosen for this investigation will also be included in this chapter.

Summary of Problem Statement

Recent statistics show a dramatic reduction in the use of libraries and in consultations with librarians for research assistance. Meanwhile, the research environment has become both more complex yet, paradoxically, easier to use than ever; the labyrinthine Internet offers a wealth of answers to queries in a matter of seconds, while just as quickly producing a lost or overwhelmed feeling among information seekers. As a result, there is a critical need for the continuing training and education of researchers.

Librarians have historically been responsible for the organization and management of the stores of human knowledge, and for ensuring information literacy among researchers. In recent years, however, librarians have become
disintermediated from researchers and the research process for a variety of reasons.

The number of students in distance programs has increased tremendously in recent decades. By definition removed from access to the physical university campus and the academic community, this is the group of students with which librarians have the least contact. Distance programs include doctoral level degree programs that demand the most exhaustive and sophisticated level of research. It is imperative that librarians gain a thorough understanding of the research practices and preferences of doctoral students in distance programs.

The problem addressed in this study was that librarians do not have sufficient information about the research practices and preferences of doctoral students enrolled in distance programs.

Restatement of the Research Questions

1. What are the differences in information seeking behavior and research resources used between doctoral students enrolled in a distance learning program and doctoral students enrolled in residential educational programs? For the distance learning and residential categories separately:
   1.a. To whom do students turn for assistance with research?
   1.b. What are the preferred research resources?
   1.c. What, if any, are the perceived barriers to consulting with the university librarians?
   1.d. What, if any, are the perceived barriers to using library resources?
   1.e. What factors influence selection of research resources?
1.f. How do students define success in searching for scholarly materials?

Research Approach and Design

This study employed a qualitative research design, which facilitated the collection of data that most thoroughly and effectively answered the research questions. Creswell (2003) defines qualitative research design as.

Qualitative research allows the researcher to gain a richer, deeper, and more detailed understanding of participants' preferences and perspectives because it is designed to facilitate understanding of a phenomenon by looking at the total picture instead of breaking a situation into variables (Ary, Jacobs, Razavier, & Sorenson, 2006). For this reason, data was gathered through one on one interviews. The participants in the study were provided with 3 communication options for the interview. These options included utilizing the telephone, a communications software package called Skype, or utilizing an Internet chat facility called TappedIn.

In a qualitative research approach, Creswell (2003) writes, inquiry strategies used include narratives, phenomenologies, ethnographies, grounded theory studies, and cases studies. Babbie (2004) describes grounded theory as an inductive approach to the investigation of social life with the aim of generating a theory. Grounded theory differs sharply from a hypothesis-testing approach, which focuses on generating hypothesis from theory and testing it through observation. “Essentially,” Babbie explains, “grounded theory is the attempt to derive theories from an analysis of the patterns, themes, and common categories discovered in observational data” (p. 291). Glaser and Strauss (1967) write that
a grounded theory must include "four highly interrelated properties" (p. 237). A grounded theory, the authors maintain, must fit the area concerned, must be readily understandable, must be general enough for application to multiple situations, and must afford the user control over daily and changing situations.

As a result, the proposed study was a case study, applying a grounded theory approach. Open-ended data was collected and used to determine themes, another hallmark of qualitative research according to Creswell. Babbie writes that researchers can play any of several roles in field research, ranging from complete participation to complete observer. This description allows for a wide spectrum of inclusion in studies appropriate for the proposed study. In this study, the researcher by definition occupied a role of significance in the activities studied, because she was both the librarian for and student colleague of the participants. Awareness of this dual partial-participant perspective helped offset the researcher’s bias and consequent study limitations. Furthermore, the researcher's connection with participants may also be viewed as having been an advantage to this study. Lofland and Lofland (1984) write about the problem of "getting in" when conducting research (p. 20). The authors refer to the issue of gaining acceptance by the participants, and, as a result, access to the desired information or data. "Gaining entry to a setting or getting permission to do an interview is greatly expedited if you have 'connections'" Lofland and Lofland explain (p. 24)

The telephone mentioned above was a standard phone, and the conversations were tape recorded through a microphone hooked into the phone.
The Skype environment turns the computer into a telephone allowing a voice to utilize the computer speakers. A built-in recorder program recorded the conversation that took place. The online environment, Tappedln, was be used as a meeting location for participants who chose this option. The virtual interview format was furthermore ideal for the distance learning participant population since the very reason they were being studied is that they were distance students and did not have physical access to the campus environment nor to traditional face to face meetings. The Tappedln program also sends a transcript of the complete conversation to the researcher's email address, allowing for analysis.

This method of data collection is closely aligned with McMillan's and Shumacher's (1997) description of unobtrusive measures to capture data. This approach does not alter the environment for the purposes of the study, and does not require participants to do anything out of their normal routine, or receive specific treatment.

Sample Used in Study

This investigation employed non-probability sampling strategies, convenience and purposive, to identify participants. Henry (1990) defines convenience sampling as a group of individuals who are readily available to participate in a study. Creswell (2003) writes that the idea behind purposive selection is to identify participants that best will help the researcher understand the problem and the research questions. Certain limitations are inherent to the non-probability sampling approach. For example, findings from such a study will not be generalizable to a greater population. However, Henry (1990) and Babbie
(2004) both acknowledge that this approach may be appropriate when the
researcher is interested in learning about a population with key specific
characteristics. This study aimed to gain a closer understanding of doctoral
distance and residential students' research habits and preferences. To ensure
that the students were engaged in similarly demanding research projects,
doctoral student who were engaged in, or had recently completed their
dissertation literature reviews were selected for the study. This closely matches
Babbie’s description of a “small subset of a larger population” (p.183) that
matched the needs of the present study. For this reason, a non-probability
sampling strategy was employed to identify doctoral students enrolled in a
distance program. The individuals included were from two distance doctoral
programs at Pepperdine University, specifically, the Educational Technology EdD
program and the Organizational Change EdD program, and students from one
residential doctoral program at Pepperdine University were asked to participate,
specifically the Organizational Leadership program. This encompassed a total of
20 participants. Three programs were included in order to establish a
comparison between distance student research preferences and residential
student research preferences at Pepperdine; Doctoral students were selected for
this investigation because they are expected to conduct the most exhaustive and
sophisticated level of research projects among all students at the University.
Additionally, the research these individuals conduct and the findings they publish
have a significant impact on scholarly communication and the academic
community. As a result, their research habits are of interest and significance to
the academic community and the advancement of research. Librarians, moreover, need to be thoroughly aware of the differences in distance and residential student research practices and preferences so that these important groups of library patrons can be well served by available and appropriate library research tools.

The Organization Change concentration focuses on the broad field of organization change. Taking a comprehensive view of the world's changing external environments, this program emphasizes the theory, research, and practice of change within, between, and across organizations. This course of study uses an integrated framework to develop knowledge and skills for designing and managing continuous organizational change. Key competency areas include: ethics, interpersonal awareness/self as instrument; organizational development, organizational behavior, organizational transformation, and allied social science field of knowledge, research, and practice. Integrating strands include leadership; creative and critical thinking; future perspectives, communication, and practice.

Students follow a sequence-oriented curriculum through a series of 12, eight-day, seminar-style sessions held at conference facilities. Sessions are scheduled at two-to-four month intervals over a three-year period.

In the third year of study, students participate in an International Experience and a Change Project supported by faculty and an on-site mentor. Students begin their dissertation research in the third year and complete all degree requirements during the fourth and fifth year of doctoral study.
The doctoral concentration in Educational Technology, which includes roughly 20 to 25 students per year, has been designed to prepare leaders in the field of technological applications and innovation in the world of education and business. All courses for this program are taken with a cadre, or team, with an annual intake in the fall. Course work is integrated with 60 percent face-to-face meetings and 40 percent online segments, creating a truly distributed learning environment. The majority of communication occurs online through newsgroups, Web pages, and real time "chat" in a virtual environment hosted by SRI and Pepperdine.

Most students in this program reside in the United States, with a distribution that reaches Northeast, Southeast, Midwest, Northwest, and Southwest, including Alaska and the Hawaiian Islands. Outside the 50 states students reside as remotely as Europe, Asia, and the Caribbean Islands. Additionally, students have attended online class meetings while traveling domestically and abroad.

Concentration courses focus on advanced learning theory as it is related to product design, the relationship between humans and computers, and the special management issues that surround technology. In addition, core courses are geared toward the technological environment where appropriate. All students complete a five-unit consultancy, and as part of the policy development course, spend several days in Washington, D.C., discussing technology and education policy with national leaders.
Online classes are conducted on the Internet, and face-to-face classes are offered at the West Los Angeles Graduate Campus, the East Coast, and a national conference location. To facilitate online communication and assignment completion, all students are required to purchase a laptop computer. Most students accepted into the program have at least three years experience beyond a MA in an educational setting and at least 5 years experience in an educational technology environment. The program begins with a one-week TechCamp©. Although the Fall term and courses for the doctoral program in educational technology begin in September, the five-day mandatory TechCamp© takes place in July. Attendance for face-to-face sessions is required for five extended weeks (most occurring over a part of weekend) each year.

The EdD program in Organizational Leadership (OL) is designed to develop individuals who have the knowledge and capability to assume leadership roles in a variety of settings. It was created to provide an environment where educators can advance their leadership skills while sharing ideas and experiences with business and academic professionals. The program has applications in educational institutions of all kinds and business environments as well.

Teamwork is emphasized in the OL program, and a student's ability to work collaboratively, both face-to-face and via electronic media is essential to successful completion of the curriculum. This program subscribes to the tenet that leadership today and into the future will demand an ability to build and work with communities. All new students are required to participate in a two-day community building workshop and orientation meeting prior to the start of the first
semester. Classes are conducted face-to-face, and are offered on weeknights and occasional weekends at the West Los Angeles and Irvine Graduate Campuses.

*Instrumentation*

The researcher created an eighteen-question multiple-part question interview document to collect the data (see Appendix B). The questions all were developed to gather and analyze the differences in perceptions between residential and distance learning doctoral students on the use of online data gathering tools. Each question was designed to find themes about how the two different categories of students feel about utilizing the library online databases to perform their exhaustive scholarly research. There were a variety of questions that examine the different methods and sources the students have used and why they have chosen these methods. The rest of the questions analyzed the type resources and support that the students had tried to use to ease the frustration and complete the exhaustive research. The instrument was used as a guide for the interview, assuring that all research questions were addressed. Isaac and Michael (1981) discourage researchers from using pre-existing research tools because it is unlikely that there is any identical research study that will duplicate the environment in which the tool was used before. Babbie (2004) describes the qualitative interview as an “interaction between an interviewer and a respondent in which the interviewer has a general plan of inquiry but not a specific set of questions that must be asked” (p. 300). The list of interview questions was critical in guiding the conversation, however because, as Babbie explains, “it is
vital for the qualitative interviewer, like the survey interviewer, to be fully familiar with the questions to be asked" (p. 300).

The interviews were be conducted over approximately a two month period of time. Each interview took between 30 minutes and an hour. The participants were given a choice of performing the interview on the telephone, using a communications program called Skype, or in the online educational chatroom environment called TappedIn.

Clear directions were given at the beginning of each interview and the interviewer told the participants to say "pass" on any question they felt uncomfortable answering. Per the recommendation of Thomas (1999) the interviewer included a statement reminding participants that prior to analyzing the transcripts, the participant's names were deleted from the transcript all together. In addition, in the 3 interview environments the participant could choose to change their name as an extra human subjects protection. As an incentive for participation in the study a drawing was held and two selected participants were chosen to receive book store gift cards. Ary et al. (2006) says that monetary incentives increase the participation rate in survey or interview data gathering process. Though it appears that the rate increases as the monetary reward increases, the inclusion of any incentive, regardless of amount, raises the response rate by 15%.

All data gathered via survey items was used in the study; no data was requested that is irrelevant to the investigation. In order to gain an understanding of the participants, the interviews ended with a series of demographic questions
This section of the interview will gauged the participant’s level of computer fluency and information literacy. The interviews ended with an expression of appreciation for the participants contribution, acknowledging the time invested in the study.

**Validity and Reliability**

Validity is a measure of the degree the questions answer what they were developed to answer (Robert, 2004). A panel of three experts who demonstrated experience in academic, doctoral level research procedures and methodology established interview question and methodology validity. Each prospective expert received an email soliciting their participation as a panel expert and describing procedures for conducting the validation of the interview questions and the techniques for the interviews. Once they agreed to serve as a panel member, each expert received via email, the interview questions along with the research questions. They were asked to compare the questions to the research questions to see if they correspond and answer the research question. Each expert was asked to complete an interview with the researcher utilizing one of the 3 methods. In this way the researcher gathered information regarding the quality of answers on the questions and the clarity of utilizing Tappedln, telephone, or Skype as effective interview methods.

This process established face validity of the interview questions. Face validity means that the interview questions appear valid for the intended purpose per the panel of experts. This is vital for the data gathering process, Ary, Jacobs, Razavieh, and Sorensen (2006) explain, because participants “are more inclined
to respond to questions they perceive to be relevant and meaningful than to questions whose purpose they do not comprehend" (pp. 439-440).

Familiarized with the purpose of the interview questions, panel members were also asked to evaluate content validity of the interview items. Content validity assessment entails determining to what extent the instrument gathers “suitable and sufficient data upon which appropriate conclusions can be drawn” (Isaac & Michael, 1995; Ary et. al., 2006). Creswell (2003) maintains that validity is, however, considered a strength in qualitative studies, and offers a number of methods for establishing this measure. The interview questions were modified as a result of the experts’ assessment of the questions.

The literature reveals some disagreement about the appropriateness of reliability assessment in qualitative research. According to Stenbacka (2001), “The concept of reliability is even misleading in qualitative research. If a qualitative study is discussed with reliability as a criterion, the consequence is rather that the study is no good” (p. 552). Others argue, however, that the premise of reliability cannot be ignored in qualitative studies. Lincoln and Guba reframe the measures of quality for the qualitative paradigm, suggesting that the terms, Credibility, Neutrality, Confirmability, Consistency, Dependability, Applicability or Transferability may instead be applied, (Lincoln & Guba, 1985). Seale adds the expression “trustworthiness,” as an important measure. Accordingly, for this study, pilot interviews were arranged, with three individuals, one utilizing the telephone, one using the software program Skype, and one
using the online chat facility TappedIn, in order to determine the effectiveness of each of the 3 methods.

*Data Gathering Procedures*

Twenty participants each received an email inviting them to participate in a one on one interview regarding questions about their researching techniques as doctoral students. The email included a cover letter explaining the study, the process of the interview and the three choices of how the interview could take place. Also included in the cover letter were options for when the interview could be conducted, an option for participants who choose to use the telephone to call the investigator thus protecting their identity/telephone number from being revealed, and an option for the participant to use a pseudonym protecting their identity even further. The initial email to participants was sent out by departmental faculty, further protecting their identity. In addition, within the body of the email the participants were requested to send an email to a colleague of the investigator to schedule the appointments. In this way the investigator did not know with whom she was speaking. Lofland and Lofland (1984) write about the importance of anonymity in research beyond the essential need to protect the identity of participants. "The absence of names or the use of pseudonyms," the authors write, "helps both the reader and the analyst focus on the generalizable patterns emerging from the data and to avoid getting deflected into telling or hearing a 'juicy' human interest story" (p. 29).

There were 3 different methods of conducting the interviews. The first method utilized the traditional telephone. The transcripts were gathered through
the use of a digital recorder attached to the receiver of the telephone. The second method of gathering data used was a free, web-based software package called Skype. This software allows two or more individuals to carry on a dialog via computer speakers and microphones. In effect, the computer functions as a speaker phone. Another piece of software records the conversation as it occurs and saves it as a computer MP file. The third tool utilized was an online chat facility called TappedIn. This web-based tool automatically saves a text-transcript of the conversation, and delivers it via email to the individuals present in the chatroom after they have logged off. The text files were saved into a word documents and all names were removed. In all methods of interviewing the participants were asked to assume a pseudonym thus protecting their identity.

Because participants were allowed to choose one of these 3 methods, it was assumed that their comfort level in responding to questions was enhanced. This choice of methods may have enhanced and increased participation in the study and even enhanced self-disclosure (Burton & Goldsmith, 2002).

Data Analysis

Transcripts from the interviews were assessed for the appearance of themes using the HyperResearch software. Interview transcripts were imported into HyperResearch as individual cases. Codes were developed by the researcher with the purpose of identifying the range of possible answers to the interview questions vis a vis the research questions. Reports were produced that gathered transcripts, or cases, with similar responses to interview questions.
Chapter 4: Data Analysis and Findings

Introduction

Responses in this chapter are organized according to research questions. As mentioned earlier, six research sub-questions were developed to allow examination of the various unique categories of data that provide answers to the overarching research question. A list of all codes developed for the study is included in Appendix E.

Description of Sample

A total of twenty students from three separate doctoral programs at Pepperdine University were included in this study. The programs were all part of the Education division within Pepperdine's Graduate School of Education and Psychology (GSEP). Ten residential and ten distance students participated in the study. Five students were enrolled in each of two distance programs: the Ed.D. in Educational Technology and the Ed.D. in Organizational Change, respectively. Ten student participants were enrolled in the Ed.D. in Organizational Leadership, a residential program of study.

Pepperdine faculty members who chaired dissertation students in the three programs were contacted to ask for names of students suitable for the study. Suitability, as mentioned earlier, simply meant that the student was actively working on, or had recently completed the literature review for their doctoral study.

Participants chose from 3 communication options for the interview. These options included utilizing the telephone, a communications software package
called Skype, or a Web-based chat facility called Tappedln. The distribution of students' choice of communications technologies vis a vis their program of study is represented in the table below.

Table 1.

*Participants' choices of communications tool for their interviews.*

<table>
<thead>
<tr>
<th>Choice of communications tool/program(EdD)</th>
<th>Skype</th>
<th>Tappedln</th>
<th>Telephone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational Technology(EdD) Distance</td>
<td>1</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Organizational Change(EdD) Distance</td>
<td>1</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Organizational Leadership(EdD) Residential</td>
<td>0</td>
<td>0</td>
<td>10</td>
</tr>
</tbody>
</table>

Table 2.

*Participants' distance to campus by program of study.*

<table>
<thead>
<tr>
<th>Participants' distance to campus /per program</th>
<th>Educational Technology/Distance</th>
<th>Organizational Change/Distance</th>
<th>Organizational Leadership/Residential</th>
</tr>
</thead>
<tbody>
<tr>
<td>mean. dist to campus</td>
<td>786 miles</td>
<td>996 miles</td>
<td>30 miles</td>
</tr>
<tr>
<td>Median</td>
<td>80 miles</td>
<td>400 miles</td>
<td>15 miles</td>
</tr>
</tbody>
</table>

In a typical distance learning doctoral program at Pepperdine, the average distance to the Pepperdine campus from a student's residence is 1,195 miles.

Three programs were included in order to establish a comparison between distance student research preferences and residential student research preferences at Pepperdine; Doctoral students were selected for this investigation
because they are expected to conduct the most exhaustive and sophisticated level of research projects among all students at the University. Additionally, the research these individuals conduct and the findings they publish have a significant impact on scholarly communication and the academic community. As a result, their research habits are of interest and significance to the academic community and the advancement of research. Librarians, moreover, need to be thoroughly aware of the differences in distance and residential student research practices and preferences so that these important groups of library patrons can be well served by available and appropriate library research tools.

**Sub-Research Question A: To whom do students turn for help with research?**

The codes developed to identify responses specific to this research sub-question are listed in Appendix F. One of two codes that yielded the most participant-cases in terms of whom students turn to for assistance was *ask a librarian* which was reported in seventeen transcripts. One distance student said, “And I called the Pepperdine library from [an east coast state] and said can you just kind of guide me through this and in a heartbeat you know I was there and then I was able to find a couple of dissertations that I was looking for” (Personal Communication, 2008). A participant from the residential, Organizational Leadership, program likewise expressed satisfaction with a librarian’s suggestions, “…my chairperson recommended that I meet with the librarian and get help with the library as to how to do the research and I should have probably done that before starting my paper but that was critical” (Personal Communication, 2008).
When the code mentioned above was clustered with several other codes that similarly reflected students' consultation with the librarian for assistance, the number of cases retrieved remained seventeen. The codes in this cluster included: advised to see librarian, advises use of librarian, and praise for the librarian. They were included in the Boolean statement as follows: advised to see librarian OR ask librarian for help OR advises use of librarian OR Praise for the librarian. This is not surprising as it indicates that participants who either advised colleagues to consult with the librarian, offered praise for the librarian's suggestions, or were advised by someone else to seek out the librarian's help did, in fact, contact a librarian. Furthermore, of the seventeen participants who asked the librarian for assistance, sixteen also either expressed praise for the librarian or said that they would advise a new colleague to seek help from the librarian.

Figure 1. Differences in consulting with librarian.
When separated into distance and residential categories, the researcher found that all 10, or 100%, of the distance students interviewed had asked the librarian for help and, consequently, 7, or 70%, of the residential students had consulted with a librarian. One residential student commented: "- yeah - boy I had a heck of a time figuring out how to do that... I finally looked up Janet who's a librarian up here she's just wonderful... (Personal Communication, 2008)."

The other most cited code category for this sub-research question involved consulting with colleagues. The cluster: *advises collaborating with colleagues* OR *help from non Pep colleague* OR *help from Pep colleague* OR *helped Pep colleagues* also yielded 17 cases. One residential student commented: "...they helped me out a lot. One of my cohort, in fact... was a great resource because he worked for NASA the federal government so he would send me links dealing with federal agencies and different pamphlets so I had people in my corner that were helping me" (Personal Communication, 2008). One of the participants in a distance program said, "colleagues were most helpful during research - getting ideas where they looked and getting support" (Personal Communication, 2008).

Of the seventeen participants who reported collaborating with colleagues, most (12), specified working with Pepperdine colleagues, while less than half (7) said that they found non-Pepperdine colleagues helpful in the process. Finally, five students consulted Pepperdine colleagues as well as non-Pepperdine colleagues.
In terms of distance versus residential students' favoring consultation with colleagues, the distribution of was the same in number as for seeking assistance from a librarian. The values were reversed, however, with 100%, or 10, of the residential students, and 70%, or 7, distance students highlighting the importance of collegial suggestions in the research process.

Within this group of seventeen, 7 students reported consulting with non-Pepperdine colleagues. In this group, 4 were distance students and 3 were residential; as evenly divided as is possible. One residential student commented that she sought help from, "other experts in the industry where I was working" (Personal Communication, 2008). A distance student explained, "... you know what really [sic] helped me the most, was working with someone who does research who took the time to help me take my ideas and form then [sic] in the
way a lit review is done …he is a friend and mentor - someone I have worked with in various capacities for about 20 years" (Personal Communication, 2008).

Of the 20 participants, 10, exactly half, reported receiving help with their research from faculty, either at Pepperdine (including chairpersons) or affiliated with other universities. One of the distance students commented, “…one of the people on my committee is a researcher at USC and she's actually kind of a world renowned researcher and she's been very helpful…I want to do interviews and I really wasn't sure about how to set that up. I asked her for some samples and she sent me 20 pages of stuff …"( Personal Communication, 2008). Another distance student also praised faculty, "And it doesn't take them long, I mean, my guess is it just comes right off the top of their head or they may have to pick up a book and look for two minutes, but not much and they can be very very helpful so that is tremendous" (Personal Communication, 2008).
Figure 3. Differences in consulting with faculty.

Of the ten participants who named faculty as helpful to the process, seven were distance students who offered enthusiastic remarks about their helpfulness. This number, of course, represents the majority of all distance students interviewed. Consequently, a minority of only 3 residential students, or 30% of all residential students interviewed, stated that they received help from faculty. Their remarks, interestingly, were notably less eager than those made by the distance student participants. "My professors will tell me about such and such a book I should get," said one of the two residential students in this category. The second, when responding to the researcher's question, "...did you turn to anybody for advice or help like faculty or...?" offered the following perfunctory
answer, “My chair… and my committee member” (Personal Communication, 2008).

Of the twenty participants, 6, or 30 %, reported that they received help with research from their advisor or chairperson. Clearly pleased with the help received from his chairperson, one distance student said, “I'll be back looking for some sources and my chair has sent me some references. (Personal Communication, 2008).” Another distance student’s positive remark, “my chair will also recommend an author - that really helps me to know which ones are respected.” Was however tempered by the following comment, “I find that frequent communication with my chair does not happen.” She elaborated, “it is hard, because I really respect and like my chair, and I know she is busy - she is not a hand holder and I knew that, so it is okay, but it does make the process longer...” (Personal Communication, 2008). The other three responses fall somewhere within this range of enthusiasm; from expressing simple acknowledgement of assistance from the chairperson to sincere gratitude.

Within this group of six participants, four were distance students and two, consequently, were residential; twice as many distance students relied on advice from their chairpersons.

Following up on the somewhat negative comment offered above by the distance student who felt unhappy with the lack of contact with her chairperson, it is important to mention that a few other distance students expressed similar frustrations.
20%
Distance student participants who did not express feelings of isolation or loneliness

80%
Distance-student participants who expressed feelings of loneliness or isolation

Figure 4. Distance students who experience feelings of isolation.

The code combination: distance student wants more help OR lonely distance student resulted in 8 cases, or, 80% of the distance student participants interviewed. A few participant comments reflected student concerns relevant to the sub-RQ currently under discussion: To whom do students turn for assistance with research? Some of the complaints reflected frustration, in one case, using strong language, “after coursework it feels like we were drop kicked to the curb … I’ve paid thousands and thousands and thousands of dollars for maybe a phone call or two in the last two years” (Personal Communication, 2008), said one exasperated student. Another distance student participant agreed, albeit less dramatically, “getting help from faculty has been awkward or nil - … It’s a pretty lonely process; pretty isolated” (Personal Communication, 2008).
Five students, 25% of the total interviewed, mentioned the importance of mentors and/or coaches. At least one participant, a distance student, expressed emphatic, even passionate praise for her mentor, relating, "I really had no idea how to write a lit review or the purpose of a lit review ... if it weren't for my mentor, I would still be struggling." This student also eagerly suggested introducing mentors as a service at Pepperdine, "Mentors! A dissertation mentor program!!!...Mentor programs rock - we do this for new teachers and principals..." (Personal Communication, 2008).

Offering somewhat less emotional commentary, a residential student was nevertheless clear in her recommendation, "I would say when they're finishing their theory and getting ready to go into the independent research to align themselves with a couple of real good coaches." Describing the type of individual suitable for the mentor role, this student continued, "Could be a faculty, could be a graduate could be someone they work with who's been through the doctoral process someone who understands about the process" (Personal Communication, 2008).

Only one participant, a distance student, specifically mentioned paying for such a service, "I have a dissertation coach a person that I've hired to think things through so I don't wander in the desert for 12 months" (Personal Communication, 2008). Two participants, a distance and residential student, respectively, implied that the service should be offered by the university. "There should be a go between person that is sort of a sub committee support staff individual that is a person just designated to help people do research," suggested
the residential student. The distance student's comments, already mentioned above, "A Mentor help program!" certainly communicate enthusiasm for the idea.

Within this group of 5, the ratio of students was 3:2, once again, as equal a division as that number allows. Here, however, residential students accounted for the larger portion, and 2 were distance students.

*Sub-Research Question B: What are the preferred research resources?*

The codes developed to identify responses specific to this research sub-question are listed in Appendix G. The code cluster that yielded the most cases in terms of preferred

![Use of Databases to Conduct Research](image)

10%
Students who did not use library databases when conducting literature reviews

90%
Students who used library databases when conducting literature reviews

*Figure 5. Students who use databases to conduct research.*
research resources was: advises use of databases OR considered many databases OR library databases easy to use OR start with libdatabases OR Use of Pep library databases OR no problems accessing databases OR identifies databases accurately. This combination produced 19 cases, in other words, all but one of the participants interviewed used the library research databases when gathering material for their literature reviews. By and large, additionally, the students' comments about their experiences in using the databases carried a positive tone.

"I've gone to the library a number of times. Accessed their research [databases]– their reference librarians are very helpful ... yeah, no barriers at all," said one distance student (Personal Communication, 2008).

A residential student, reported, "I've gone to the virtual library ...and usually it's pretty easy to find the journal articles and all of that" (Personal Communication, 2008).

Another distance student, who is a faculty member at an east coast university, even said that he prefers using the Pepperdine online library over the one at the university where he teaches. This student explained, "I tend to go to Pepperdine a little bit more than [my college]...I think the Pepperdine resources are a little bit easier to work with than what we have at [my college]... I went to the library electronically and here I am [on the east coast] so I was basically using the Pepperdine library in California..."(Personal Communication, 2008).

The one student who did not use the library databases for his literature review was a distance student who said, "I don't tend to use the large database
search like the ebscohost or proquest”. He explained that he had not had good results when looking for material in the databases, “Those don't seem to work for me, when I put in my criteria ... either I can't find anything, which I don't understand - or it takes me off into just a bunch of garbage ... even if I ask for just the peer reviewed material...” (Personal Communication, 2008).

Figure 6. Where students choose to start their research.

Within the category of students who used the library databases, 12, a majority of participants, said that they would start their search for materials there. The code cluster: start with libdatabases OR start with Pepperdine library website collected 6 distance student cases and 6 residential cases. One distance student said, “For cold searches: I typically start with the online Pepperdine Library resources” (Personal Communication, 2008). Additionally, the code
string: databases easy to use OR library website user friendly OR no problems accessing databases brought together 13 cases, 7 distance and 6 residential. In other words, sixty-five percent of participants, distance and residential alike, found the databases easy to use and easy to access.

A minority of participants, 25%, reported using Google as part of the literature review process. This group was as evenly divided as is possible with 2 distance and 3 residential students. It is important to note that several of these students approached use of this search engine with the utmost caution, for a variety of specific purposes, with a primary reliance on library databases. Four of these five students used Google in combination with library databases. A distance student explained that she would read articles found using Google, but would not "reference them" in her dissertation. Another use was described by a residential student, "someone might suggest a book to me...and I went back to the library but they didn't have it so I would go on the Internet and they might have ... the abstract ... or maybe the first two or three chapters." A residential student commented, "I've also gone and googled stuff Which I'm a little scared of ... I trust our databases more than I trust the Google stuff..." (Personal Communication, 2008).

The one participant who did not use library databases at all made the following comment, "I start with ... take whatever three or four words describe what you're looking for and google it as a starting point ... that's just throwing a broad net and seeing what's in it ... so Google first, Wikipedia second" (Personal Communication, 2008). This participant was a distance student. No other
participants in the study claimed to have used Wikipedia. Only three students, 15%, of the participant population, started their searches using Google. Two distance and one residential student comprised this small group.

Another small group of participants, 30%, used Google Scholar as a research tool. Similar to the approach used by students who reported using Google, this group demonstrated discrimination in their application of the tool. All of the students in this group used library databases as well. One residential student explained, “Couple of times I couldn’t find things and then I would go to Google Scholar to find the name of the article and author and then I would go back into Pepperdine to find the article.” A distance student reported, “[Google Scholar] helps with the search, the identification of topic info I need” (Personal Communication, 2008).

Only one student, a residential participant, started his searches in Google Scholar. He said, “as a first step I went through primarily Google, …it's scholar.google.com…because almost everything in there is a peer reviewed journal” (Personal Communication, 2008). In addition to also using the Pepperdine library databases, this student reported searching the IEEE database available at his workplace library. Twenty percent of participants did not report where they typically started their research.

Forty-five percent of all participants, 9 individuals, expressed specific criticisms about the limitations of Google and/or the Internet as research resources. The search string Google limitations or Internet limitations produced
five distance students and four residential students. Though the distance participants dominate here, the number nine could not be divided more evenly.

One distance student noted the overwhelmed feeling cited numerous times in the literature, "too many results in Google...i didn't use either Google or Google scholar ever that i can remember" (Personal Communication, 2008). Another distance student expressed dissatisfaction with the holdings, "I rate Google high on initial info sourcing but low on depth." A residential student said, "If I were to go to Alta Vista, Google, or Yahoo and search ... I am going to get all kinds of junk that I don't know has been validated in any way shape or form and is not necessarily reliable" (Personal Communication, 2008). Another residential student also felt strongly that Google was by and large unreliable. She said, "I don't think I ever went into Google I didn't even go into Google Scholar." This participant also taught an undergraduate research class and she explained how she would admonish her students on this issue, "...and then I threaten to fail anybody who uses Wikipedia" (Personal Communication, 2008). The comments above reveal doctoral students' skepticism of sources on the Internet and demonstrate their prudently use of the World Wide Web.

A number of students who were critical of Google and the varieties of non-scholarly websites that crowd the Internet did acknowledge the presence and value of reputable organizations as well. The code string (use of Google OR use of Google Scholar OR use of Internet OR use of non pep websites OR buys own subscriptions OR advises use of Internet OR advises use of Google OR use of Amazon ) AND ( Internet limitations OR Google limitations ) resulted in
6 cases, indicating that participants used the Internet for research but with a wariness of the inherent limitations. This group of 6 participants included 4 distance students and two residential. The residential student who would warn her college students “NOT to go into like Google or AOL or things like that,” conceded that there were valuable sources on the Internet. She elaborated, “if you’re going to use websites, use websites … that either end in ‘edu’ education or ‘org’” (Personal Communication, 2008).

The distance student who said that she, “didn’t use either Google or Google Scholar ever,” nevertheless found useful material on websites established by certain venerable research organizations such as “Pew Internet and American life” (Personal Communication, 2008). Another distance student, made use of the “look inside this book” feature on Amazon. He explained, “You can read part of their books. So I’ll read part of it, and it’s the real book and it’s sort of hit and miss because they’ll have like the first 10 pages of a book and then they’ll have pages 50 to 55 and then 200 to 210 … I’ve gotten lucky a couple of times and found things that were applicable … the only thing I worry about that is that if I read 5 pages of a book and the author is going in exactly the direction I want to go in, I always wonder what the 6th page said …You know it might go on for 5 pages about this wonderful idea and then on p. 6 say but we now realize that was a bunch of crap” (Personal Communication, 2008).

He concluded by saying, with a laugh, that he often would buy such a book if the excerpt looked relevant. A residential student whose earlier comments reflected
her concern about the validity of material found in a random Internet search engine query did, however, find useful data for her study on the Department of Labor's Website.

Altogether, 7 students out of the 20 interviewed reported finding useful research material on specific Internet websites. The search string: *advises use of Internet OR use of Internet OR use of non pep websites OR buys own subscriptions OR use of Amazon* drew together a group of 3 distance students and 4 residential student participants.

In contrast to the codes, *use of Google and use of Google Scholar*, which were used to tag statements that specifically identified use of these search engines to find research material, the codes in the string immediately above marked a participant's identification of particular websites as sources of data. As a result, the seven participants selected with these codes all described a careful and discriminating usage of material drawn from the Internet. Six of these students were included in the group gathered previously and a number of their specific websites have already been described, such as the Department of Labor's website and the Pew Research Center's American Life Project webpages. Another residential student commented, "I also looked at a state level [data] through the Internet as well ... nation/state-wide about my topic area and I also looked at tract/department of labor" (Personal Communication, 2008).

The *buys own subscriptions* code brought in another purposeful use of Internet websites. A distance student explained, "There is an online peer reviewed journal on online learning that I have found to be very helpful - however,
pep library doesn't link to it so i had to set up an account” (Personal Communication, 2008). Here the student reveals that she uses the Internet to access a clearly academic resource. This statement does reveal a lack of knowledge about library services (the library can obtain articles for students that are not included in the online databases), however this is discussed in a later section.

In the next category, identified by the code string: *need physical library OR desires access to physical library OR used physical library OR used other libraries*, 10 students reported either using a brick and mortar library or indicating that access to a physical library was important to them. This group was evenly divided, 5:5, between distance and residential students.

Interestingly, participants who *desired* access to a physical library were exclusively distance students. This code represented students who wished to use a physical library but did not have access to one. Three participants fit this category. One said, “I sometimes which [sic] I could go to a physical library, like Pep and get the book I needed... I think also having the physical location would give me a place to do to work in a quiet location” (Personal Communication, 2008). The other student explained, “Living away from campus limits me some - if I were on campus I could go to the library directly, but living away means that I pay a LOT of money to get the resources I need...” (Personal Communication, 2008).

Two residential students in this category described using non Pepperdine libraries. One student said that he, “…went to the Lakewood library, went to
Pepperdine's library, went over to USC's library..." (Personal Communication, 2008). Another student reported using some hospital libraries.

Interestingly, more residential participants reported not using or needing physical libraries. A slightly larger group of 11 students, were gathered with the code cluster: (NOT desires access to physical library) AND (little use of physical library OR no use of physical library OR old school libraries limiting OR prefers online research). This code string eliminated students who expressed a wish to have better access to a brick and mortar library facility, leaving a group of respondents who had a minimal need for the physical library and/or were by and large satisfied with library resources available online. This group, which resulted in more than half of the participants, 55%, was comprised of 4 distance and 7 residential students.

A distance student said, "I have only searched online," musing "It sure beats roaming dark areas of a library where some students may have become petrified and covered with cobwebs." He continued with emphasis, "I cannot imagine anyone who has the knowledge of being able to search online wanting to roam dark halls as the beginning to any research" (Personal Communication, 2008). Another distance student agreed and elaborated, "...in college I went ... the main [college] library. You used to ...[go] into a brick and mortar building or library ... you did your search you got hard periodicals and hard books and ... the librarian had to bring in from other university systems. But ... you were fairly limited ...[it] is different now" (Personal Communication, 2008).
More residential than distance students expressed a preference for online research, and for not making the trip to the library. One student said, "I live in OC and my preference is not to go in to either the LA campus or even the Irvine campus to go to the library so I do almost all of my research via the computer" (Personal Communication, 2008). Residing a mere three miles from campus, another residential student explained, "But I have not, so far, mastered the art of going actually going down to the library and sitting there. And when I say 'mastered' the point is: I don't like going down to the library and sitting down there" Stressing her satisfaction with online resources, she said, "I have found that by just going to our virtual library most of what I've needed for my lit review" (Personal Communication, 2008). Another student likewise found most of what she needed via the virtual library. In the response to the researcher's question, "and what about the use of the physical library did you travel to campus much or did you pretty much stick to online resources?" The student responded, "Most of it was online" (Personal Communication, 2008).

Students in this category, three distance and four residential, also expressed appreciation for the dramatic improvements in access to electronic research resources in recent decades. The code old school libraries limiting, was applied to seven participants out of the eleven described above. A residential student said, "realizing how difficult it must have been to do this ... 20 or 30 years ago before we had internet access ... I'm thinking: how did people ever do a thorough lit review? How could they have done that?" (Personal Communication, 2008). A distance student commented, "It is wonderful I tell my daughters they don't know
how grateful they are now compared to when I went to college" (Personal Communication, 2008).

Of the 20 students interviewed, 8, or 40%, reported that they purchased books for their literature reviews. Weighted in favor of residential participants, 3 students in this group were distance students; 5 were enrolled in the residential program.

Only one student, a distance student, indicated that purchasing books was a burden for her. She explained, "I run into obstacles when I want to find a book section, and then I have to go and buy the book - wait for it to arrive in [a state 3000 miles away] or pay about $30 for it to be sent quickly - this is a huge time suck for me, the waiting for a book section to arrive." She continues, "I wish there would be a way to get some of those resources through the online library" (Personal Communication, 2008) suggesting that she is not aware of the library's various interlibrary loan delivery services available to distance students.

Taking bemused responsibility for her personal study approach, a residential student said, "I need to mark my stuff up so I get the stuff that I can actually print ... or I buy the book and go home ...and mark it. I like to mark my stuff up" (Personal Communication, 2008).

Sub-Research Question C: What, if Any, are the Perceived Barriers to Consulting with the University Librarians?

The codes developed to identify responses specific to this research sub-question are listed in Appendix H. The code cluster,

*barrier to getting help from librarian OR desires easier contact with librarian*
returned 8 cases, less than half of the total participants. Dominated by distance students, this group included only 3 residential students. Half of the distance student participants expressed their wishes for improved contacts avenues with librarians. These participants described a variety of obstacles to getting assistance from librarians.

One distance student described her several-months search for a specific document. She did not ask anyone for help, she related, because she did not think anyone would be able to help. Another distance student described a similar barrier, "I rarely do ask for help... my thinking is that if I can't figure out what terms to use, then how can I ask for help?" (Personal Communication, 2008).

A residential student who earlier described a preference for not using the physical library, made an interesting point about perceived barriers, "I think there are times that you have a question and you think oh I am not at the library so can't ask anybody when in reality you could go and email somebody or you could pick up the phone, but you don't think about it because physically you are not in the library" (Personal Communication, 2008). Here this student revealed a purely emotional barrier that may plague distance students. No distance student participants expressed this experience, however. Another residential student revealed that he was misinformed with the following complaint, "They weren't there on Sundays very much." He continued, "I think you know that librarians lead a need a normal life and work relatively normal hours" (Personal Communication, 2008). In fact, Pepperdine librarians do work on both Saturdays and Sundays. Finally, the following residential student may have had a valid
complaint about library hours. She said, “I ran into one little hitch and that was that I was kind of finishing up my methodology ... I think it was in the summertime when Pepperdine was closed... so I went into the Chapman library and got some material and had no problem” (Personal Communication, 2008). During two or three weeks during the month of August the Pepperdine graduate libraries do shorten hours because school is out of session.

Transcripts revealed that the feeling of isolation in and of itself was distressing to several students, creating both perceived barriers. One student explained, “...I felt that I was working always through a computer or computer database or I was on my own” (Personal Communication, 2008). Another distance student also felt limited by the distance to campus. In response to the researcher’s question, “What about barriers to getting help from the librarians at pep?” She explained concisely, “distance.” She elaborated, “…if I were on campus I could go to the library directly” (Personal Communication, 2008). A similar observation was also expressed by a distance student, “I think if I had physical access, I would have a more personal connection to other librarians and might ask for more help” (Personal Communication, 2008).

A total of 4 distance students, almost half of the distance participants, were troubled by their geographic remoteness from campus. This is further discussed later in this chapter.

Sub-Research Question D: What, if Any, are the Perceived Barriers to Using Library Resources?
Specific criticisms - Database problems. The codes developed to identify responses specific to research sub-question D are listed in Appendix I. A total of 6 participants, 30%, made comments during their interviews revealing difficulties in using the library research databases. The code *library databases difficult to use* was applied to 3 distance student cases, and 3 residential.

One distance student communicated some confusion about her understanding of what a research database is, "Lately I go to Eric to do my searches and to download the reference to endnote, Eric tells me where the journal is and then I go to the Pep library and find the journal [sic]. I find this more useful than going to one of the databases because they are limited" (Personal Communication, 2008). Since ERIC actually is a research database this student sounds as if she may not have a clear understanding of the research tools available or their usage. Needless to say, such lack of understanding necessarily would lead to difficulties in using the tools, whether or not the student accurately perceives the limitation. A residential student complained, "sometimes I was looking for something very specific and it would take awhile ... the system at Pepperdine...Sometimes wasn't real user friendly" (Personal Communication, 2008).

Two of these six participants reported turning to Google as a result of the difficulties encountered using the databases. A residential student explained, "my progression was: Pepperdine databases - and then ... I would Google I didn't really have to digress and go backwards to the databases I stayed in Google." A
residential student settled on using Google primarily because, frequently when he would go looking [in the major databases], he would "find a bunch of crap" (Personal Communication, 2008).

Specific criticism - Obtaining research material. Participants listed a number of specific frustrations concerning use of library resources. One such criticism involved obtaining research material. The code combination: 

*frustration getting books OR frustration getting articles* returned 8 participant cases. With the exception of one, all of these participants were distance students. The problems with the process of obtaining material varied, including not finding citations to difficulties in accessing the full text of articles and more.

A distance student discussed her frustration obtaining books, "I run into obstacles when I want to find a book section, and then I have to go and buy the book - wait for it to arrive in [a state 3000 miles away] or pay about $30 for it to be sent quickly" (Personal Communication, 2008). Another struggled with articles that were not available full text, "it was frustrating when you had a reference and you couldn't gain access to it - it wasn't online or wasn't available for whatever reason ... And that's when occasionally I had to utilize our resources going through UC Berkeley or Stanford library system up in the Bay Area to get an article I particularly needed or wanted to at least get a review of" (Personal Communication, 2008). Of course, this student is also revealing his lack of awareness of library services; articles not available via Pepperdine's online library can be requested through the interlibrary loan service.
Another distance student felt that the library's system of delivering books to distance students was inefficient, "I've not tried ... to borrow a book through ... [the library] ... just because I don't want to get into all the mailing and everything" (Personal Communication, 2008). A residential student, likewise, expressed dissatisfaction with the interlibrary loan process, "...but there were many things that I couldn't get access to immediately, you know, online and I had to use interlibrary loan ... for books [and] I had to order articles that were either too old or they just weren't in the Pepperdine library ... So it took longer, in other words" (Personal Communication, 2008).

The code *Pep library doesn't have all I need* also represented barriers for participants in obtaining research materials. This code was applied to 5 cases in the study. Within this minority of participants, 3, were distance students; 2 were residential.

One distance student said, "I would have liked to have the pep library linked to more online resources" (Personal Communication, 2008). Another described the same experience, "I will not infrequently find journals that it doesn't cover" (Personal Communication, 2008). A third distance student viewed this situation more philosophically, "Nobody has access to all the subscriptions to all the databases, all the periodicals that you need so eventually or occasionally you may need to get to a brick and mortar library and system that can retrieve this for you and make a copy ... the old fashioned way" (Personal Communication, 2008). As mentioned before, these resources would almost certainly have been
items Pepperdine could have retrieved for free from other libraries for the students.

The two residential students in this category also mentioned needing to use other libraries to find needed resources. One student utilized the corporate library at his place of employment, "there were many things … through my work that I could access that the Pepperdine library didn't have" (Personal Communication, 2008). Another student listed some libraries that offered specialized resources. She said, "I went into some libraries at some hospitals - and some medical libraries" (Personal Communication, 2008).

Specific criticism - Lack of assistance. Five participants in this study reported that a lack of assistance from Pepperdine faculty or from their dissertation advisors was a barrier to acquiring necessary research materials for their literature reviews. The code combination: no help from advisor OR no help from pep faculty, gathered 3 distance students and 2 residential.

A distance student described how her chairperson in effect discouraged requests for help. She explained, "I[sic] asked my chair for a good model of a proposal and I got something from her that looked very different from anything I had ever seen before-- it made me very nervous!" (Personal Communication, 2008).

"Getting help from faculty has been awkward or nil," said another distance student (Personal Communication, 2008). Likewise, a third described how she avoided "bothering" her chairperson, knowing he or she was busy. "…it is hard, because i [sic] really respect and like my chair, and i [sic] know she is busy - she
is not a hand holder and I [sic] knew that, so it is okay, but it does make the process longer" (Personal Communication, 2008).

A residential student described a lack of like-mindedness in terms of goals with his chairperson, "he didn't really understand where I was going with this so he saw me as confused and he wasn't really helpful..." (Personal Communication, 2008). The other residential student in this category reported, "I think he [the chairperson] was not very useful ... with chapter two." (Personal Communication, 2008).

Specific criticism - Distance student issues. A majority of the distance student participants in this study, 60%, reported a specialized category of concerns particular to their unique circumstances. Labeled with the code "Lonely distance student" this group included 6 participants. This code was applied to cases where the student specifically mentioned feeling lonely, isolated, or distance to campus as a limitation in their progress. Because only distance students expressed such sentiments, the code was labeled lonely distance student. Comments ranged from emotional and angry to objectively critical.

One distance student used fiery language to describe her frustration, "I felt like [the instructors] moved on to the next [class of students] and said, good luck with that dissertation activity...now I've paid thousands and thousand [sic] and thousands of dollars for maybe a phone call or two in the last two years" (Personal Communication, 2008). Another student did not communicate equally extreme dissatisfaction, he did acknowledge the experience of loneliness, however. Another distance participant said, "I guess I will add that distance
learning is fabulous, but lonely." He added, "As someone who has considered giving up, yet is still in the game" (Personal Communication, 2008). One student lamented, "...the dissertation support that is offered at Pepperdine isn't an option for someone who lives in [a state 3000 miles away]" (Personal Communication, 2008).

![Lack of Confidence](image)

**Figure 7.** Differences in feelings of low self-confidence.

**General frustrations and other critiques.** The search code *expresses lack of confidence in research ability* was assigned to comments by participants that reflects a clear perception that the participant's inadequate search skills interfered with their research efforts. Six participants, thirty percent, were included in this category. Only one of these six, five percent of the total participant population, was a residential student. A few comments went so far as
to suggest that the participant was harboring concerns about the completeness or quality of their resulting chapter two.

One distance student using characteristically colorful language, said, "I've never felt more stupid or more incompetent at any time in my life both personally and professionally" (Personal Communication, 2008). Another student admitted, "- i [sic] really had no idea what i [sic] was doing, and got through it but don't have confidence..." (Personal Communication, 2008). The sole residential student in this category made a few apologetic, self-deprecating remarks about her technological skills. Chuckling, she said, "...technologically I struggle...I don't think I'm a very quick learner...I had a heck of a time figuring out how to do that" (Personal Communication, 2008).

The final code included under the category General frustrations and other critiques is don't know where to go. This was applied to comments that revealed the participant felt unsure of the next step to take in the research process, unaware of what resources were available, or what resources were appropriate for their topic. This code was applied to 5 participant cases, or 25% of the total group. As in the case of the prior code discussed, only one of the 5 participants (5% of the whole participant population) was a residential student.

This distance student's comment captures the experience, "...i [sic] think that is one reason my diss [sic] has taken me so long - i [sic] get stuck and don't know where to go" (Personal Communication, 2008). Likewise, another distance student said, "I've cited quite a few periodicals in my dissertation which my chair's not thrilled about but sometimes I just don't know where to go" (Personal
Communication, 2008). The residential student in this category explained, "...initially I didn't know that there were certain databases only for scholarly articles so I was kind of spinning my wheels on different databases, not knowing that" (Personal Communication, 2008).

*Lack of knowledge.* The final barrier to using library resources that is discussed relates to a clear unawareness on the part of the participant, about what resources are available, appropriate, or how to use them. Although there is an obvious overlap with the *don't know where to go* category, these participants do not necessarily recognize or acknowledge their limitations. Thought they in reality are misinformed about research resources, they may not feel lost or experience confusion about what steps to take.

The code combination: *misidentifies library databases OR misinformed about library research OR misinformed about library services* produced 11 cases, representing 55% of the total population. This group was divided as evenly as possible between residential and distance students; six were distance and five were residential participants. Distance students are discussed first.

One of the distance students misidentified library research databases. This student said that he didn’t have any problems accessing the databases, his response to the researcher’s question, “Were there any specific databases that you liked?” revealed lack of knowledge about what defines a library research database and where to find them. He explained, “…one of them [the databases] was the ACM digital library. I know I used that a lot because I joined ACM and then I paid 100 bucks to get access to their library....And then there was another
one... it was the same sort of thing. I started seeing lots and lots of papers showing up on that database ... it was 50 or 100 dollars or something" (Personal Communication, 2008).

The fact that this student used websites requiring payment communicates that he was conducting research outside the realm of Pepperdine's library tools and services. Additional to his inability to recognize Pepperdine's research resources, was this student's lack of awareness of services available to him through the library. He says, "At some point, you know, when you're going through the program and spending this much money, another 50 or 100 bucks ...You just don't even think about it," suggesting that he does not know that material could be obtained without charge via the library (Personal Communication, 2008). Another distance participant expressed unawareness of the library chat reference service, "there is an IM online librarian? ... i didn't know that" (Personal Communication, 2008).

One student's comments about the One-Stop search tool revealed her misperception about its limitations. She described it as a "tool to search all of the databases." In reality, One-Stop only searches 13 of our 160 databases.

The residential student participants communicated issues similar to the distance students listed above. Referring to the One-Stop search tool described above, one student said, "Where I start out is at the Pepperdine Library online ... I use that new thing where you can do a search and it will look through everything. It will look through various journals and it will pop up some ideas"
(Personal Communication, 2008). As mentioned above, One-Stop only searches 8% of the total library research databases.

The next student was unfamiliar with the extent of material that can be retrieved for patrons via the library's Interlibrary Loan service (ILL). When asked if she encountered any problems accessing journal articles, this student said, "The ones that were printed prior to 1990 were pretty hard" (Personal Communication, 2008). In reality, ILL can efficiently retrieve just about any journal article not available via the library databases or in print. Normally it takes only a few days to obtain an article, and it is delivered to the student electronically.

*Sub-Research Question E: What Factors Influence the Selection of Research Resources?*

The answers to this research question were pulled from results already described in prior sections of this chapter. Students are influenced to choose resources by the individuals to whom they turn to for assistance. As a result, the data used to answer the first research question provides part of the answer to this question. Residential students turn, in the following order, to colleagues, librarians, and faculty for assistance. Distance students consult with librarians first, and thereafter equally with colleagues and faculty. Overall, students rely on the assistance of individuals who have knowledge and experience in scholarly research. On the issue of to whom they turn, the issue of accessibility also appears to play a role, as discussed earlier in this chapter.
Students overwhelmingly choose to do their research in the scholarly research database, illustrated by the fact that 95% of participants utilize the library research databases. Comments made by students relating to their concerns and caution in using the World Wide Web and Google as research sources reveal their preoccupation with finding reliable, academic quality material. Very few participants, (15%), start their research in Google; only one student, (5% of the total population) began his research in Google Scholar.

Doctoral students' hesitant and highly selective use of sources found on the Internet also illustrates their commitment to the use of scholarly sources for their literature reviews. The code string Google limitations OR Google not used OR Internet limitations identified a majority of 14 (70%) participants who expressly communicated awareness of the dubious academic quality of information found on the Web. This group was comprised of 7 distance and 7 residential students, reflecting the consensus approach for both categories of doctoral participants.

Most of the participants' comments about this issue have already been related earlier in this chapter; however, an additional two quotes help to illustrate the issue. One residential student explained, "...when you are in a library database you are specifically getting quality material" (Personal Communication, 2008). Another said, "[the material] that you can get through Google and all that is probably not [scholarly]" (Personal Communication, 2008).

Sub-Research Question F: How do Students Define Success in Searching for Scholarly Materials?
The final sub-research question did not produce data useful to the present study. The researcher anticipated that a participant's definition of, and thoughts about success in searching would be a useful indicator of the variety of factors that influence selection of resources by doctoral students. However, only one student communicated a triumphant experience in finding a specific document. A distance student was in need of the transcript from a seminar held in 1970, "it took me 3 months to find it and to tell you the truth I can't remember how I stumbled upon it but I found it and it was only in microfish [sic] ... It was the high of my research - i [sic] NEVER expected to find it but tried on and off nevertheless" (Personal Communication, 2008). This student was not deterred from her quest for the document by three months of unsuccessful searches. On the other hand, only one student gave up using research databases because of a lack of success in finding material, "I don't tend to use the large databases, the Ebscohost or Proquest...Those don't seem to work for me, when I put in my criteria ... either I can't find anything, which I don't understand - or it takes me off into just a bunch of garbage" (Personal Communication, 2008). Beyond these instances, transcripts did not yield data that identified feelings of success or failure influencing a student's choice of research tools.
Chapter 5: Discussion and Recommendations

Introduction and Summary of the Literature Review

Recent statistics show a dramatic reduction in the use of libraries and in consultations with librarians for research assistance (Kyrillidou, Young & The Association of Research Libraries, 2006; Zabel, 2005; OCLC, 2002). Concurrently, the research environment has become both more complex yet, paradoxically, easier to use than ever; the labyrinthine Internet offers a wealth of answers to queries with a minimum of effort in a matter of seconds (Brownlee & Ebbers, 2002), while just as quickly producing a lost or overwhelmed feeling among information seekers. As a result, there is a critical need for the ongoing training and education of researchers (Cook, 2006).

Librarians have historically been responsible for the organization and management of the stores of human knowledge, and for ensuring information literacy among researchers. In recent years, however, librarians have become disintermediated (Boyd-Byrnes & Rosenthal, 2005) or, removed from, researchers and the research process for a variety of reasons. Jerry Campbell (2006), former Dean of libraries at the University of Southern California, observed that “today the library is relinquishing its place as the source of inquiry” (p. 16).

The number of students in distance programs has increased tremendously in recent decades (Summey, 2004; Boyd-Byrnes & Rosenthal, 2005). By definition removed from access to the physical university campus and the academic community, this is the group of students with which librarians have the least contact. Distance programs include doctoral level degree programs
that demand the most exhaustive and sophisticated level of research. It is imperative that librarians gain a thorough understanding of the research practices and preferences of doctoral students in distance programs.

**Summary of the purpose and problem statements.** The problem addressed in this study was that librarians do not have sufficient information about the research practices and preferences of doctoral students enrolled in distance programs.

Doctoral distance students are expected to conduct substantial and exhaustive research, however, librarians have minimal contact with this student population. Covi’s (2000) research showed that doctoral students in residential programs model research practices after the practices of their advisors and mentors. This may not be possible for distance students as a result of their lack of access to the physical campus resources and community.

Findings from a study conducted by Online Computer Library Center (2003), showed that undergraduate students prefer to consult search engines, specifically Google, for research. Many believe that what is found on the web, via a common search-engine is “good enough” (Bell, 2005; Prabha et al., 2007), employing the approach of “satisficing” their information needs. Herbert Simon (1955) coined this term about fifty years ago, combining satisfy and suffice into satisfice, to communicate a good enough approach.

The purpose of this study was to investigate the differences in information seeking habits and preferences between doctoral students enrolled in distance programs and those enrolled in residential programs. Specifically, this study
aimed to identify to whom or what doctoral student researchers turn for research support, preferred research sources, barriers encountered to consulting with librarians, barriers to using library resources, factors that influence the selection of resources, and how success in searching for scholarly materials is defined.

To ensure that the students were engaged in similarly demanding research projects, doctoral student who were engaged in, or had recently completed their dissertation literature reviews were selected for the study. This closely matches Babbie's description of a "small subset of a larger population" (p.183) that matched the needs of the present study. For this reason, a non-probability sampling strategy was used to identify doctoral students enrolled in a distance program. The individuals included were from one residential and each of two distance doctoral programs within Pepperdine University's Graduate School of Education and Psychology (GSEP). Specifically, students in the Educational Technology EdD program, the Organizational Change EdD program, and students from one residential doctoral program, the EdD in Organizational Leadership, were asked to participate. This encompassed a total of 20 participants. Three programs were included in order to establish a comparison between distance student research preferences and residential student research preferences at Pepperdine; Doctoral students were selected for this investigation because they are expected to conduct the most exhaustive and sophisticated level of research projects among all students at the University. Additionally, the research these individuals conduct and the findings they publish have a significant impact on scholarly communication and the academic community. As
a result, their research habits are of interest and significance to the academic community and to the advancement of research. Librarians, moreover, need to be thoroughly aware of the differences in distance and residential student research practices and preferences so that these important groups of library patrons can be well served by available and appropriate library research tools.

The Organization Change program concentrates on the broad field of organization change. Students follow a sequence-oriented curriculum through a series of 12, eight-day, seminar-style sessions held at conference facilities in various locations. Once per term, the meetings take place on the Pepperdine campus. The seminars are scheduled at two-to-four month intervals over a three-year period.

The doctoral concentration in Educational Technology, which includes roughly 20 to 25 students per year, has been designed to prepare leaders in the field of technological applications and innovation in the world of education and business. All courses for this program are taken with a cadre, or team, with an annual intake in the fall. Course work is integrated with 60 percent face-to-face meetings and 40 percent online segments, creating a truly distributed learning environment. Face-to-face sessions are scheduled twice each term; once on the Pepperdine campus and once elsewhere in the US or abroad. The majority of communication occurs online through newsgroups, Web pages, and real time chat in a virtual environment hosted by SRI and Pepperdine.

Most students in this program reside in the United States, with a distribution that reaches Northeast, Southeast, Midwest, Northwest, and Southwest,
including Alaska and the Hawaiian Islands. Outside the 50 states students reside as remotely as Europe, Asia, and the Caribbean Islands. Additionally, students have attended online class meetings while traveling domestically and abroad.

The EdD program in Organizational Leadership (OL) is designed to develop individuals who have the knowledge and capability to assume leadership roles in a variety of settings. It was created to provide an environment where educators can advance their leadership skills while sharing ideas and experiences with business and academic professionals. The program has applications in educational institutions of all kinds and business environments as well. Classes are conducted face-to-face, and are offered on weeknights and occasional weekends at the West Los Angeles and Irvine Graduate Campuses.

Restatement of the Research Questions

The research questions addressed in this study were organized into one main, overarching question, and six sub-research questions. The questions were as follows:

1. What are the differences in information seeking behavior and research resources used between doctoral students enrolled in a distance learning program and doctoral students enrolled in residential educational programs? For the distance learning and residential categories separately:

1.a. To whom do students turn for assistance with research?

1.b. What are the preferred research resources?
1.c. What, if any, are the perceived barriers to consulting with the university librarians?

1.d. What, if any, are the perceived barriers to using library resources?

1.e. What factors influence selection of research resources?

1.f. How do students define success in searching for scholarly materials?

This discussion is organized by the research questions.

Major Findings from the Study

Sub-Research Question A: To whom do students turn for help with research? The first major finding relating to Research sub-Question A reflects the importance of colleagues and librarians in the research process. Doctoral students prefer the help of colleagues and librarians when conducting literature reviews. Eighty-five percent of the participant students interviewed in this study sought out peers and librarians for support and assistance with research in the dissertation process.

Distance students preferred consulting with a librarian more than with any other individuals for research assistance, and were pleased with the guidance received. All 10 of the distance students interviewed for this study expressed the importance of having access to a librarian. Residential students also depend heavily on the librarian's suggestions. In this study, 70% of residential participants expressed the importance of librarians' assistance.

Residential students preferred consulting with peers above any other possible advisors when conducting research for their dissertations. All residential
students favored working with colleagues, whereas 70% of distance students described the importance of assistance from peers.

It is possible that residential students' contact and consultation with each other is significantly more convenient than their connection with faculty or other professional advisors. Students residing locally may encounter colleagues on the physical campus and/or they may reside near one another. For distance students, however, colleagues and faculty are usually unavailable for convenient, face-to-face meetings, or otherwise live, synchronous exchanges. Colleagues and faculty, on the other hand, are likely occupied with jobs, family, and/or teaching responsibilities. They may, furthermore, reside in widely differing time zones. Contact with librarians may offer fewer obstacles for these students since librarians are professionally committed to be available for the singular purpose of research assistance throughout the week as well as on weekends.

One distance student, similarly, expressed appreciation for the dedicated nature of librarians' services, "It's nice to know that there's a librarian there to help out and go find those things" (Personal Communication, 2008).

Doctoral students ranked faculty a distant third as individuals to consult for research advice. Only half of the participants in this study reported seeking help from faculty, including Pepperdine faculty, the participants' chairpersons, and/or faculty at other institutions. As with distance students' dependence on librarians for assistance, they also preferred consulting with faculty in much greater numbers than do residential doctoral students. Distance students were 40% more likely to seek out the assistance of faculty, in the research process than
were residential students. Only distance students chose to consult with faculty outside of Pepperdine University.

A minority of students, distance and residential alike, reported consulting with mentors. Only 25% of participants mentioned seeking research advice from a mentor or coach. They were equally important, however, to residential and distance students.

Sub-Research Question B: Doctoral students prefer using library databases for research. Distance and residential students alike preferred using library research databases above any other research tool. One hundred percent of residential participants, and 90% of distance student participants reported using Pepperdine's library databases when gathering material for their literature reviews. Most students, furthermore, began their research with the library’s research tools, and the majority claim that they are easy to use and easy to access as well.

Books were used heavily and equally by distance and residential students. Eighty five percent of participants in this study described the importance of books in their literature review process. Residential students were more likely to purchase their own books than are distance students. Despite their relative ease of access to campus libraries and collections, 40% more residential students reported purchasing books than did distance students. Electronic books were used by one in four doctoral students, distance and residential alike.

Doctoral students are cautious and careful users of resources found on the World Wide Web. Ninety percent of students interviewed for this study
communicated an awareness of the academic unreliability of much information found via a Google search. Residential and distance students shared this acknowledgement evenly. Doctoral students retrieve material online with a critical eye. They described a prudent use of specific scholarly websites, such as "Pew Research" (Personal Communication, 2008) named by a distance student or, as a residential student said, "those that end in edu or org" (Personal Communication, 2008).

Residential students demonstrated a lesser preference for using the physical library than did distance students. Residential students were 75% more likely than distance students to report that they engage in very little use of the library, didn’t use the library at all, or preferred online research than their distance colleagues. There was no difference in the use of Internet resources between the two groups. Interestingly, however, distance students were the only participants who expressed a desire for easier access to the physical library.

Sub-Research Question C: To what, if any extent, do distance students experience barriers to consulting with librarians. Residential and distance students alike prefer to seek help from librarians and express enthusiastically positive comments about the assistance received. However, distance students are 40 % more likely to desire easier contact with the librarian.

Sub-Research Question D: Distance students experience frustration in the research process. There is no difference in the ease with which distance and residential students use library databases. However, distance students are 7
times more likely to express frustration about their experience with obtaining books or journal articles for their literature reviews.

Distance students uniquely experience feelings of loneliness and isolation during the dissertation process. Sixty % of distance students interviewed acknowledged the challenges of writing a dissertation while enduring a physical and technical separation from colleagues, faculty and university campus resources. One distance student described, “...even though we were preached to about learning communities and such...the community ended very abruptly” (Personal Communication, 2008).

Distance students, furthermore, express much less confidence in their research abilities than their residential counterparts. Distance students are 4 times more likely to experience a “lost” feeling, when conducting research than residential doctoral students. Forty % of distance student participants commented that they occasionally don’t know where to go to get research material. As another distance student said, “sometimes I just don’t know where to go” (Personal Communication, 2008).

Ironically, distance and residential students demonstrate no difference in their knowledge about, or competence with available library research tools and services. They are equally well informed about the use of databases, methods of obtaining material, and options for requesting help from librarians.

Conclusions and Implications Based on the Literature Review

Sub-Research Question A – To whom do students turn for assistance with research? The literature reveals staunch support for the statement made by
Campbell (2006) that librarians have "lost their supremacy" as the providers of recorded knowledge and historical records (p. 16). The suggestion that librarians will soon not be needed because academic researchers are increasingly able to access all necessary materials online appears frequently in books and articles. The several studies described earlier in this dissertation also support this belief, with librarians showing up as the last individuals consulted by persons looking for information. Only one of these studies from the literature included graduate students. Furthermore, it reported only a "small number" of students, and these may not have been doctoral level students; as reported in chapter two Barrett (2005) and Janowska, Hertel, and Young (2006) report that research on graduate students is small. Contrary to these observations and predictions in the literature, the present study shows that both distance and residential doctoral student researchers continue to rely heavily on librarians' assistance in locating literature, choosing and using research tools.

Tenopir's discovery that there is no typical library user is also of significance to the present study, and pertains to the results of the research that returned radically different finding than did earlier studies. Tenopir cautioned about drawing conclusions regarding research habits and information needs of one type of library patron based on data collected about a different user group at a different library. Factors such as user status, discipline, task, type of institution, and age all impact an individual's decisions when searching for information. The participants in the present study demonstrate an interesting challenge for Tenopir's observation and recommendation because the students
are fundamentally and overwhelmingly similar in many fundamental ways, yet one key factor distinguishes them significantly from each other. They are all doctoral students at Pepperdine University, studying under the same faculty, university mission, and all are at the same point in their doctoral programs. In other words, their status, discipline, task, and type of institution are fairly identical. Though data was not collected about the participants' ages in the present study, the similarity of the several other features suggests that their ages would not be dissimilar. However, the distance students may reside as far as thousands of miles away from campus and do not have convenient access to the physical resources offered on the university campus. Though Tenopir doesn't offer a specific category for this characteristic, it might fall under type of institution since it is an attribute of the program. As a result, we might expect that the students have many closely matched needs but also some very dissimilar experiences.

In contrast to surveys that show librarians are among the last to be consulted by patrons (Holliday & Li, 2004; OCLC, 2005; Hisle, 2005; and Plosker, 2006), but in strong support of Tenopir's observations, all distance students and a great majority of residential students interviewed in this study reported consulting with a librarian for assistance with their research. A conclusion that can be drawn from this result, in view of the literature, is that doctoral students conducting exhaustive literature reviews for their dissertations (a task similarity) will need assistance from dedicated research specialists, such as librarians, regardless of where the student resides.
A 1996 study on library anxiety conducted by Jiao, Onwuegbuzie and Lichtenstein showed that the distance between a student’s home and the library is a factor that contributes to library anxiety. Similarly, Macaulay (1999) expressed concern that the loss of live contact with librarians would be problematic for distance students. He predicted that these students would receive less personalized and less obvious assistance. With rapid and dramatic advancements in information technology in subsequent years, and the consequent portability of research tools, Liu and Yang (2004) postulated that the limitations of physical distance had been erased. The results of the present study, however, suggest that research limitations may not have been completely eliminated for distance students. Half of the distance students in the present research expressed a desire for easier avenues of contact with librarians. It is noteworthy that none of the residential students reported such a need. A conclusion based on this result is that physical separation from campus experienced by distance students continues to create special needs and challenges for distance student researchers. Additional concerns uniquely expressed by distance students are discussed later in this chapter.

Though the surveys of library users from the literature discussed above revealed dramatically different results from the present research regarding consulting librarians for assistance, the data from this research was remarkably similar to earlier studies in terms of reliance on friends or classmates for help. Participants in the OCLC study named peers as the top category of individuals consulted. The same results were found by this researcher. Colleagues ranked
with librarians as first choice of individuals sought out for help with research overall. Residential students unanimously turned to peers for assistance; the great majority of distance students did so as well. A conclusion, in support of earlier studies, can be made that peers represent an important support network for doctoral students conducting literature reviews.

As with the results relating to librarians, the data showed a 30% difference between residential and distance students' preference for seeking assistance from colleagues. As suggested earlier, this may be related to the fact that librarians always are available, and expressly employed to help students conduct research. Distance students are separated from colleagues geographically, and also often by time zones, making contact challenging. A distance student supports this statement saying, "...my librarian, actually, is the only person that responds immediately to my requests and has been my biggest source of help" (Personal Communication, 2008). A conclusion based on these results and student comments can be drawn that distance students' geographically isolated circumstances make librarians the most conveniently accessible individuals to contact for research advice.

It is perhaps tempting to construe a conclusion supporting results from several studies (Tenopir, 2003; Tipton, 2000; Kelley & Orr, 2003; Liu & Yang, 2005) in the literature that indicate convenience as a significant motivating factor in the research behaviors of students. Another study, however, indicates that services dedicated to distance patrons rarely compare to services and resources available to residential constituents (Liu & Yang, 2005). As mentioned earlier,
another way to express this circumstance experienced by distance students is that barriers exist to certain resources and services, making them inconveniently useful to distance students. A consequent conclusion resulting from the literature review and from this study is that barriers exist for distance students, preventing them from conferring with colleagues as easily as residential students seek advice from their program colleagues.

Every study found in the literature review indicates that students consult with professors or teachers for research help more often than with librarians. Butler (1997), for example, claimed that faculty were students' main source of information about the library. Participants of this study reported distinctly different preferences, however. As mentioned earlier, librarians and colleagues were the top choice research advisors of doctoral students. Faculty rated a distant third in the selection sequence; exactly half of the participants reported seeking research advice or information from Pepperdine faculty, their chairpersons, and/or non-Pepperdine faculty. A few students, in fact, vividly described the unhelpfulness of faculty.

Although two of the studies found in the literature showed that a mere 11% and 36% of participants, respectively, sought out their teachers' help, however teachers still outranked librarians. In the current study, librarians outscored faculty (teachers) by 50%.

One possible reason for doctoral students' relative reluctance to seek advice from faculty by doctoral students may be found in Macauley and Cavanagh's (2000) explanation that students' faculty advisors frequently assume that
graduate students already have mastered appropriate level research skills. As a result, the authors suggest that students are discouraged from seeking out assistance with research from the faculty, and possibly librarians, at the risk of revealing poor or inadequate familiarity with research tools. As discussed earlier in this chapter, however, the present study shows that students in actuality don't seem at all hesitant to contact librarians with questions. Only half of the participants, however, chose to consult faculty for help.

None of the participants specifically reported reasons described above for avoiding seeking help from faculty, but certain self-deprecating comments made by participants indicated a belief that their research skills were lacking. One distance student said, "...oh, boy - i don't feel comfortable [sic] suggesting anything in regards to research, as i feel that i am such a novice myself" (Personal Communication, 2008). A residential student admitted, "sometimes I don't think I'm a very quick learner." Because, she explained, she "had a heck of a time" figuring out how to use a certain database (Personal Communication, 2008). This information suggests/inspires the following conclusion: Reluctant to reveal their lack of research skills to respected faculty and advisors, doctoral students prefer to contact colleagues and librarians for research assistance. Further research on the issue of the reluctance to seek help from faculty is implied by these results.

Distance students reveal a much stronger willingness to seek help from faculty than residential students. More than twice as likely to contact their chairperson, other Pepperdine faculty, or faculty outside of Pepperdine, distance
students' tendency to seek advice from faculty ranked equally with their preference for contacting colleagues. The literature does specifically not address the frequency with which distance students contact faculty. There is discussion, however, of their low level of usage of home university services and resources. In contrast to the literature, however, a majority of the distance participants in this study sought advice specifically from Pepperdine faculty and/or their Pepperdine chairperson. This finding further suggests the accuracy of Liu and Yang's (2004) observation, that technology has erased or at least influenced, limitations of distance that made it more difficult for distance students to contact faculty than it is for residential students.

Covi's (2000) research is of importance to the issue of students' reliance on suggestions made by faculty. She found that doctoral students adopted the research behaviors modeled by their chairpersons and senior academic colleagues. The findings in the present research question Covi's findings. Only a minority of residential student in this study sought assistance from Pepperdine faculty or from their chairpersons. Though the majority of distance students consulted with faculty, it is not certain that this contact was enough to ensure pedagogic continuity. A conclusion may be drawn that for distance students, faculty may be as available as colleagues for consultation, but still less easily accessible than librarians. Based on the scant literature available on distance doctoral students' needs for assistance, the importance of further research, particularly in the area of pedagogic continuity in distance doctoral programs.
Interestingly, of the 25% of students who expressed complaints about poor contact with Pepperdine faculty, the three distance students voiced the most severe criticisms. One distance student complained, "I definitely don't feel like I can ask my chair or committee for specific help with sources... they are the leaders in their field and it would be nice if they guided me a bit" (Personal Communication, 2008). Another said, "getting help from faculty has been awkward or nil" (Personal Communication, 2008). Finally, the following distance student was forgiving, but described a similar experience, "i knew she was busy so i didn't force anything... it is okay, but it does make the process longer..." (Personal Communication, 2008). Though this group represented a minority among distance student participants, such complaints were not voiced by any of the residential students. In conclusion, distance students reveal more distress about the lack of assistance received from faculty than residential students. Distance students enrolled in doctoral programs could likely face the greatest need for assistance with research. As Jiao et al. (1996) implied, library anxiety is heightened as distance to campus increases. Additionally, per Kuhlthau's research findings mentioned earlier, these students are likely to experience frustration in their research endeavors (1999). There is further discussion about distance students concerns in subsequent sections of this chapter.

Sub-Research Question B: What are the preferred research resources?

"Most student research projects begin with a Google search," according to Plosker (2006, p. 50). A preference for Internet search engines, most notably Google, among students is widely supported in the literature (Barrett, 2005;
DeRosa and OCLC, 2005; Hisle, 2005; Breivik, 2005). As mentioned earlier, however, little of this research included graduate students (Barrett; Jankowska et al., 2006). Tenopir’s (2003) caution against drawing conclusions on one patron group from data collected on another is of significance to this part of the study as well. Distance and residential students alike expressed a preference for using library research databases over any other research resource; Google was only utilized to a limited extent by students in this study. As described in the major findings section of this chapter, all residential students and 90% of distance students used the Pepperdine library research databases to find material for their literature reviews. Most of these students, furthermore, begin their research from the library website, using the library’s research tools. When compared to the mere 15% of participants in DeRosa’s 2005 study who made use of references from a library website, findings in the present study are remarkable. Doctoral students’ unique and extreme needs to conduct exhaustive scholarly literature reviews for their doctoral research lead them to make extensive use of their library’s website and online research databases. It can be concluded, in further support of Tenopir’s observations that doctoral students research behaviors will demonstrate similarities as a result of the resemblances of the students’ circumstances and assigned tasks. Findings imply that substantial and extensive academic resources need to be made available to all doctoral students. Additionally, further research is needed on the unique research needs of doctoral students.
Needless to say, students could not have accessed these databases prior to the advent of the worldwide web when research databases became accessible remotely. In this regard, Liu and Yang's (2004) suggestion referred to earlier that the limitations of physical distance had been eliminated, is appropriate. The phenomenon of portable research database that enable scholarly research to be conducted from home, work or even local Starbuck's cafes has also caused great changes to take place in the research habits of distance students.

Earlier studies of distance student populations revealed a minimal use of the home university library and a strong utilization of resources in community libraries located in the proximity of their homes (Stasch, 1994; Shouse, 1995; Cassner & Adams, 1998; Unwin, Stephens, & Bolton, 1998; Dew, 2000; Tipton, 2000). In contrast, a minimum of distance student participants in the present study, a mere 30%, made use of local libraries. Additionally, there was no difference between residential and distance students' patronage of non-Pepperdine libraries. An article by Chakraborty and Tunon (2002) and one published a few years later by Tunon, Barsun, and Ramirez (2004) relate barriers distance students may encounter when trying to make use of local university libraries. Such obstacles did not seem to affect participants in the present study however; no students reported refusal of service or other negative experiences at non-Pepperdine libraries. It is evident, nevertheless, that home university resources are used more, and local libraries used less frequently by students in the current study. In conclusion, technological advancements have, as Liu and Yang (2004) wrote, erased the differences in usage of the university library.
website and research databases between doctoral students in residential and distance programs. Additionally, the remote accessibility of library research tools has also eliminated differences between distance and residential students' use of local or non-home university libraries.

The literature does not reveal data on physical library usage patterns or preferences among residential doctoral students. The curious finding emerging from this study, that residential students are 75% more likely to report that they engage in very little use of the physical library, don’t use the library at all, or prefer online research than their distance colleagues, consequently finds no empirical support. However, Jankowska et al. (2005) observed that graduate students even in residential programs favored electronic journals suggesting some explanation for this preference.

As a result, this finding offers a strong implication for further research in the area of physical library usage by residential doctoral students, so that we may understand the underlying causes for such different experiences between residential and distance students. This finding does offer further support for Tenopir’s (2003) caution that different categories of patrons should be researched separately, even if the differences are few. A speculation could follow that residential students take campus resources for granted and that distance students, conversely, long for such unavailable amenities. Some of the participant comments may suggest this possibility. One distance student said, “l sometimes which [sic] I could go to a physical library, like Pep and get the book I needed...l think if I had physical access, I would have a more personal
connection to other librarians and might ask for more help” (Personal Communication, 2008). A residential student, felt differently, however, “But I have not, so far, mastered the art of going actually going down to the library and sitting there. And when I say "mastered" the point is: I don't like going down to the library and sitting down there” (Personal Communication, 2008). In addition to the lack of literature on the subtle issue of taking resources for granted or, conversely, yearning for resources they cannot have, the present study did not endeavor to second-guess participants’ responses. This delicate topic presents a fascinating area for research, however.

Doctoral students do not start their research with Google, demonstrating a markedly different pattern of Internet usage than participants in earlier studies. Plosker (2006) pointed out that Google most often serves as the starting point for student research according to earlier studies. Among the doctoral students interviewed here, a minority, 20%, reported starting research in Google. These students, half of whom were distance and half residential, furthermore revealed familiarity with scholarly material, a cautious assessment of items and information retrieved and/or very limited employment of the Google search engine. One distance student, for example, explained that he used it for “initial info sourcing... the identification of topic info” (Personal Communication). Similarly, a residential student specifically used Scholar.Google as a first step. The findings of this research, as a result, does not support earlier studies that show the majority students favoring Google as a comprehensive research tool (Breivik, 2005; Hisle, 2005; Barrett, 2005; DeRosa 2005).
Devine and Egger-Sider (2004) write that most researchers are unaware of the limitations of search engines. The literature suggests that confidence with using Google does not necessarily translate to information literacy skills (Seiden et al., 1997; Lancaster, 1994). As a result, doctoral students' mistrust of resources found via a Google search suggests that they are more information-literate than patrons surveyed in prior studies. Furthermore, an implication for further research on the information seeking habits and information literacy of specific groups that, as Tenopir (2003) described, have similar status, discipline, task, type of institution, and age. Earlier research showed that students used (in order of preference) newsmedia, promotions and advertising, online news, IM or online chat, and blogs to find information. The doctoral students in this study used none of these tools.

**Sub-Research Question C: Barriers to consulting with the librarian.** As mentioned earlier in this chapter, Macaulay (1999) worried that the loss of live contact with librarians would be disadvantageous for distance students. There was support for this concern in the present findings. Despite the fact that distance students utilized librarians' help with vigor and accolades, most were troubled by their geographic separation from campus, and found that distance continues to present a barrier to obtaining help from librarians.

One distance student commented, "if I had physical access, I would have a more personal connection to other librarians and might ask for more help" (Personal Communication, 2008). In response to the researcher's question, "what about barriers to getting help from the librarians at pep?" another distance
student's perfunctory reply was, "distance" (Personal Communication, 2008). Another comments, "So I tend to do that, I tend to rely a lot on you know the human contact. And oftentimes it's so hard to get people through email ... I sometimes have been successful and sometimes I haven't gotten a response" (Personal Communication, 2008). A fourth distance student admitted, "I wish I had a - and maybe it exists but I don't know of it - a way to more easily get in touch with a librarian .... I felt that I was working always through a computer or computer database or I was on my own" (Personal Communication, 2008).

A small minority of residential students complained about barriers to accessing librarians, and most of those criticisms were to some degree made in jest. One student mused, "I think there are times that you have a question and you think 'oh I am not at the library so can't ask anybody' when in reality you could go and email somebody or you could pick up the phone" (Personal Communication, 2008). With a chuckle, another student said, "They weren't there on Sundays very much" (Personal Communication, 2008). In conclusion, distance still seems to present a barrier to accessing help from librarians and a serious concern for distance students, despite the proclamation made by Liu and Yang (2004) that the limitations of physical distance had been erased for distance students. Residential students are not worried about barriers to services like distance students are.

It is important to consider that studies have long shown distance students to be largely unaware of library services available to them (Butler, 1997; Kascus & Aguilar, 1988; Azubuike & Greaves, 1989; Washington-Hoagland &
The current research showed that this continues to be true. This lack of awareness of services and tools, however, is unlikely the cause for distance students' anxiety, however, because this is equally true of residential students. Based on the findings of this study, and in view of conclusions in the literature, geographic distance, in and of itself causes distress among distance students working on literature reviews. Research conducted more than a decade ago by Jiao et al. (1996) revealed that the distance between a student's home and the library is a factor that contributes to library anxiety. The present finding supported this conclusion as the most emphatic concerns were voiced by distance students who lived more than 1000 miles from Pepperdine campus.

Studies conducted until the year 2000 indicated that distance students favor local libraries over their home university's library's services (Kascus & Aguilar, 1988; Stasch, 1994; Shouse, 1995; Cassner & Adams, 1998; Unwin, Stephens & Bolton, 1998; Dew, 2000; & Tipton, 2000). More recently, however, Tunon, Barsun & Ramirez (2004) described how libraries were having difficulties accommodating the needs of non-constituents, suggesting that barriers might arise for distance student wishing to use local libraries. The present study revealed different preferences among distance students both in the use of physical libraries and virtual library resources. Without acknowledging barriers in the use of local libraries, doctoral students overwhelmingly favored the use of home university library resources. A minority of distance students used local
libraries. Furthermore, there was no difference in the rate of non-Pepperdine library usage between residential and distance students, as mentioned earlier.

Sub-Research Question D: Barriers to accessing library resources. The literature reveals 20 years of studies acknowledging that library databases are difficult for patrons to use (Breeding, 2007; Prabha, Connaway, Ozlewski, & Jenkins, 2007; Holiday & Li, 2004; Novotny, 2004; Borgman, 1986, 1996; OCLC, 2002). More recently, such studies have highlighted the difference in ease of use between library research databases and Google. Findings in the present study did not support the literature on this point. Though a minority of students in the current research did agree with participants in prior studies, most doctoral students found the databases easy to use and to access. Once again, Tenopir's (2003) observation that different categories of students exhibit different research behaviors finds support in this study.

When frustrated with the scholarly databases, the literature shows, students turn to the web (Holiday & Li, 2004; OCLC, 2005; Hisle, 2005; Plosker, 2006; Abate, 1998). A small minority of participants, 20%, in the current study illustrated this behavior in contrast to studies noted in the literature review. As mentioned earlier, doctoral students demonstrated a cautious and prudent use of Google as a research tool. The highly selective approach to the use of research tools demonstrated by participant doctoral students may find support in Borgman's (2007) observation that "Readers who are scholarly peers and have extensive access to the literature of their fields may make fine distinctions between publication channels in assessing the quality of a document" (p. 84).
Both distance and residential doctoral students at Pepperdine have convenient and continuous access to well over 160 library research databases. Once again, doctoral students in the present research showed different information seeking patterns than participants in earlier studies, strongly indicating the importance of further studies focused specifically on their specialized needs.

Distance students experienced much greater frustration when attempting to obtain research material than residential students did. The Association of College and Research Libraries' guidelines state that, "Library resources and services in institutions of higher education must meet the needs of all their faculty, students, and academic support staff, wherever these individuals are located" (2007, para. 1). The literature reveals, unfortunately, that libraries serving distance student populations rarely meet these guidelines. Research shows that this likely is a result of a lack of funding for and attention to such services, a common circumstance in libraries (Kelley & Orr, 2003; Liu & Yang, 2005). It is not surprising, consequently, that the present study revealed distress among the majority of distance students concerning the difficulty in obtaining books and articles. Students largely blamed isolation and geographic distance as the cause of such disadvantages. On this point, consequently, electronic research tools have not erased the challenges of geographic distance and/or isolation as suggested by Liu and Yang (2004). In conclusion, distance students continue to encounter barriers not experienced by residential students in obtaining research materials. Implications for practice include ensuring that services for distance students are comparable to those available to residential students, and, are
available to them wherever they are located. Furthermore, research needs to continue to investigate discrepancies in available services, with a focus on specific types of students, as recommended by Tenopir.

Distance students revealed much less confidence in their research skills than residential students. Though students did not expressly identify this as a barrier to obtaining research materials, this characteristic quickly translates into an obstacle to progress. As mentioned earlier, the literature reveals that undergraduates and high school students are self-assured technology users who demonstrate faith in their online searching skills. Little research can be found on the level of technology or research-skills confidence among doctoral students. However, a number of studies describe the persistent lack of awareness of library resources among distance students (Butler, 1997; Kascus & Aguilar, 1988; Azubuike & Greaves, 1989; Washington-Hoagland & Clougherty, 2002; Fang 2006; Casey, Sochrin, & Race, 2002; Kelley & Orr, 2003). This shortcoming could easily produce anxiety with using research tools. The present study did not find support for the literature in the difference between residential and distance students in their familiarity with research tools, however. There is evidence in the literature, as described above, that anxiety increases among students along with their geographic separation from campus (Jiao et al., 1996). The present findings support this tendency, as described earlier.

Sub-Research Question E: Influences in Selecting Resources

The answers to this research question are embedded in the responses throughout the five research questions. The reasons for students' choices of
resources were reflected in the selections they made, and in their explanations of
the importance of the respective tools they chose to use. The same can be said
for students’ choices of individuals they turn to for assistance.

The literature describes convenience as the single overarching motivating
factor in students’ choices of resources and materials when looking for
information (cite). The findings from the present study revealed that doctoral
students’ behaviors were guided by more complex principles, however, and do
not support the literature. A dissertation, by its very nature, demands great
energy and commitment to task over a long period of time. The difficulty in
completing a dissertation is reflected in the many websites that offer to assist the
ABD-status students, in the one of many phrases well-known among doctoral
candidates, a good dissertation is a done dissertation, and in the literature.
Bookstores abound with tomes that offer help to students in the ABD-category;
help that promises to take them across the finish line. Leatherman (2000) writes
in the Chronicle of Higher Education “Technically, ABD stands for ‘all but
dissertation.’ But for anyone who has languished in that purgatory, it might as
well stand for ‘all but dead’” (A18). As a result, the word convenience may not
appropriately characterize any element of the doctoral experience.

Doctoral students’ needs for scholarly material guided their choices of
resources, and was their primary motivator in how and where to look for
resources. As described earlier in this chapter, doctoral candidates were
cautious and careful users of resources found on the World Wide Web. Doctoral
students started their research on the library website, rarely in Google, as a
result of their need for academic-quality material. Only one student participant, a distance student, expressed a preference for material that could be obtained quickly. This student said, "I don't like to wait, usually I will opt for something else that I can get immediately online" (Personal Communication, 2008). However, this same student also wished that she could go to a physical library and get books, indicated that new students should be advised to search for journals that are peer reviewed, learn to use Endnote despite the fact that "it is frustrating at first," and "read several dissertations" (Personal Communication, 2008). These comments contradict this student's claimed preference for quick delivery of materials, and instead revealed commitment to scholarly quality research practices.

Sub-Research Question F: How do Students Define Success in Searching for Scholarly Materials?

Doctoral students' feelings of success or failure in looking for research material were not useful indicators of the research tools they chose to use when conducting literature reviews. Some students expressed a lack of confidence in their research skills, and one student participant expressed great satisfaction over finding one particular document. With the exception of just two students who gave turned to the Web after having trouble finding material in the research databases, these experiences did not appear to impact the majority of students' selections of research tools, however.

Studies in information seeking behavior that have focused on the emotional experience of the searcher have shown that feelings of uncertainty and confusion
consistently are present in the process (Kuhlthau, 1993; Wilson, Ford, Foster, & Spink, 2002). Kuhlthau (1999) found that the expert searchers demonstrated less tolerance for uncertainty than novices. This might suggest that doctoral students, the most experienced among student researchers, likely would experience aggravation during the literature review. Tough transcripts from this study reveal that students did encounter frustrations while researching their literature reviews, this experience did not influence their selections of research tools. In conclusion, feelings of success or failure in the research process did not affect doctoral students' selection of research tools during the literature review process. Further research on the specific information seeking behaviors of doctoral students is implied as a result of the findings from the present study.

**Summary of the Differences Between Students Enrolled in a Distance Learning Program and Doctoral Students Enrolled in a Residential Educational Program**

The overarching research question for this study sought to determine if the differences in research behaviors and preferences between distance and residential doctoral students. A list gleaned from the findings, and influenced by the literature review, follows:

- Distance students preferred to contact librarians for research assistance.
- Distance students were less likely to contact colleagues for assistance than residential students.
- Distance students were more likely to seek out assistance from faculty than residential students.
• Distance students were less likely to purchase books for their literature reviews than residential students.

• Distance students expressed a stronger preference for using the physical library.

• Distance students were more likely to desire easier contact with the librarian than residential students.

• Distance students expressed much less confidence in their research skills than residential students.

• Distance students were more likely to seek research assistance from faculty, and revealed more distress about the lack of assistance received from faculty than residential students.

• Distance students uniquely experienced feelings of loneliness and isolation during the dissertation process.

Table 3.

Examination of the Particular Characteristics of Distance Student

<table>
<thead>
<tr>
<th>Theme</th>
<th>Cause/explanation</th>
<th>Quote</th>
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<tr>
<td>Distance students express a stronger preference for using the physical library.</td>
<td>Distance students do not have the luxury of taking physical resources for granted, and long for amenities unavailable to them. Whereas residential students eschew unnecessary trips to campus, doctoral students working on their literature reviews at a substantial distance from campus yearn for the trappings of academia that signal scholarship.</td>
<td>Macauley and Cavanagh (2000) anticipate that the loss of live personal contact could be disadvantageous for distance students. One distance student commented, “I sometimes which [sic] I could go to a physical library, like Pep and get the book I needed...” (Personal Communication, 2008). Another lamented, “if I were on campus I could go to the library directly, but living away means that I pay a LOT of money to get the resources I need... I think if I had physical access, I would have a more personal connection to other librarians and might ask for more help” (Personal Communication, 2008).</td>
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<tr>
<td>Distance students prefer to contact librarians for research assistance. They are more likely to desire easier contact with the librarian than residential students.</td>
<td>Librarians represent a dedicated research professional at students’ continuous disposal. When compared to student-colleagues and faculty, librarians by definition offer more predictable availability. As described for the previously listed theme, distance students yearn to feel more closely connected to the university in order to bolster their self-perception as doctoral students. Predictably, then, despite the fact that librarians are available via phone, email and chat, distance students want more availability, more access.</td>
<td>One distance student commented, “my librarian is the only one who responds to my questions” (Personal Communication, 2008). Another student said, “Now, so, a remote program like we have you're not really close to the university I wish I had a, and maybe it exists but I don't know of it, a way to more easily get in touch with a librarian or somebody that could virtually help me” (Personal Communication, 2008). Illustrating problematic communications with faculty, one distance student described how she avoided “bothering” her chairperson, knowing he or she was busy. Another student concurred, “getting help from faculty has been awkward or nil” (Personal Communication, 2008).</td>
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<td>Distance students are less likely to contact colleagues for assistance than residential students.</td>
<td>Distance, in and of itself, continues to inhibit student to student contact. Despite the availability of chat technology, IM, cellphones, texting and, of course, email, the reality of being far away creates a sense of separation that even convenient electronic communication tools have not managed to erase. Additionally, student-colleagues may be less appealing as sources of assistance. Colleagues may reside in widely differing time zones, they may be distracted by and consumed with family and work responsibilities, they may have completed their dissertations and have moved on beyond the school phase of their lives, they may also be struggling with their</td>
<td>In response to the researcher’s question, “Do you also feel that the &quot;live access&quot; to colleagues/peers would be helpful if you were closer to campus?” one participant replied, “I do, they might see me and not totally forget about me” (Personal Communication, 2008). Another distance student likewise explained, “I felt no one would be able to help...my colleagues were working on different topics” (Personal Communication, 2008). In response to the following question, “What about your colleagues in your program - did you collaborate with folks to get through the process? To find material and get what you needed?” The student responded, “I did somewhat, but, you know - not a lot. It's a pretty lonely process; pretty isolated” (Personal communication, 2008).</td>
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(Table continues)
<p>| Distance students are more likely to seek out assistance from faculty than residential students. | Distance students contact faculty more often than residential students for two reasons. Students on campus can visit faculty members and chairpersons in their offices; students may even bump into faculty/or committee members other in the library or a hallway. Whether or not the faculty schedules allow for convenient office visits is irrelevant; technically the fact is true. For distance students, contact with faculty has a different look and feel, however, and falls into another paradigm. Their contact options and avenues are all passive formats; they can leave a message via email, texting or by telephone. As a result, distance students do not take contact and communication with faculty for granted and tend to make greater efforts to stay in touch. Additionally, faculty members symbolize the classroom environment and experience. It is not surprising that contact with faculty can provide scholarly reassurance to distance students. Finally, as pointed out above, student-colleagues may be less appealing as sources of assistance. | “I’ll be back looking for some sources and my chair has sent me some references,” reported one distance student (Personal Communication, 2008). Another distance student offered the following positive remark, “my chair will also recommend an author - that really helps me to know which ones are respected” (Personal Communication, 2008). “My advisor in the lit search was helpful in terms of suggestions as to ways to look, and I have found a fair amount of professors who are fairly deep in narrower subjects to be very helpful... and my Pepperdine professors in particular And it doesn't take them long, I mean, my guess is it just comes right off the top of their head or they may have to pick up a book and look for two minutes, but not much and they can be very very helpful so that is tremendous,” added another distance student (Personal Communication, 2008). |</p>
<table>
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<th>Distance students express much less confidence in their research skills than residential students.</th>
<th>Without the reassuring and empowering influence of a campus environment and resources, distance students readily assume that their research skills, likewise, must be lacking. In reality, distance students more frequently contact librarians than do residential students, and as a result may be better informed about research tools available to them. Furthermore, this study showed that distance and residential students are equally familiar with library resources. Nevertheless, many distance student participants clearly doubted their expertise. Distance students’ lack of confidence in this regard further challenges their ability to view themselves as scholars.</th>
<th>“I’ve never felt more stupid or more incompetent at any time in my life both personally and professionally,” reported one distance student (Personal Communication, 2008). Another admitted, “I really had no idea what i was doing, and got through it but don't have confidence...” (Personal Communication, 2008). “I've cited quite a few periodicals in my dissertation which my chair's not thrilled about but sometimes I just don't know where to go,” expressed yet another (Personal Communication, 2008). “I’m not finding a ton on my Ebco search. It’s a little frustrating and I’m wondering if it’s me or the database,” explained a final distance participant.</th>
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| Distance students are less likely to purchase books for their literature reviews than residential students. | Comments reveal that distance students find book purchases time consuming, inconvenient and costly. Such observations were not reported by any residential student participants despite the likelihood that they would experience similar costs and delivery lag times. There are possibly more subtle reasons for these students’ reluctance in purchasing books for their projects. The combination of experiences that challenge their sense of self as scholars may easily interfere with their desire to build personal academic libraries. In other words, if distance students One distance student explained, “I would say I sometimes lean toward a journal article instead of a book because it will be painful and expensive to get it” (Personal Communication, 2008). Another indicated that purchasing books was a burden for her. She explained, “I run into obstacles when I want to find a book section, and then I have to go and buy the book - wait for it to arrive in [a state 3000 miles away] or pay about $30 for it to be sent quickly - this is a huge time suck for me, the waiting for a book section to arrive” (Personal Communication, 2008). Another distance constituent reported using electronic books exclusively. Finally, one distance student expressed the following frustration, “i feel that i wasted over a year heading in wrong directions...and a lot of $$$ buying books i never needed... i think that is one reason | (Table continues)
believe they are inadequate researchers and not genuine scholars, they will not be motivated to invest in possibly obscure academic monographs.

my diss has taken me so long” (Personal Communication, 2008).

In contrast, a residential student commented, “I buy books. I love books and I tend to buy them” (Personal Communication, 2008).

### Summary of Implications of the Study

Some researchers have expressed concern that distance students may not possess the comfort level with technology demonstrated by younger researchers because they tend to be older than typical residential university students (Behr, 2004; Brophy, 1995; Carty & Stark, 1996; Dew, 2000). Indeed, distance student participants in this study revealed a notable lack of confidence in their research skills compared to the residential student participants. Because participant age data was not collected in this study, assumptions cannot with certainty be made about the impact of age on any factors investigated in this research. However, Pepperdine faculty member and instructor in both distance and residential doctoral programs in Pepperdine’s Graduate School of Education and Psychology, Dr. Farzin Madjidi, reports that school data reveals that students in the residential program are on average a few years older than the distance doctoral students (Personal Communication, 2009). Additionally, distance students in this study shared many qualities with their residential colleagues. Both doctoral programs were in the Education department at Pepperdine University’s Graduate School of Education and Psychology, sharing an
educational mission, Dean, as well as a number of faculty members, and even textbooks. It is probable that lack of confidence stemmed from another cause.

The most obvious difference between the two programs is the format, which includes only three physical visits per academic year for face-to-face sessions to the Pepperdine campus for the distance students. Distance students and faculty also meet twice during the academic year elsewhere (in the US and abroad) for face-to-face sessions. Students meet synchronously online many times weekly, during the academic term, in intensive chat-room class meetings as well as for collaborative work with colleagues on class assignments. After coursework is completed, colleagues instantly become geographically dispersed from each other, from their faculty and from other physical campus resources including librarians. One student in this study commented colorfully on the powerful strain of this separation. It is probable that the feelings of isolation and loneliness experienced by distance negatively impact their level of confidence.

As demographics described in the previous chapter reveal, distance student participants in this study do not all reside prohibitively far from campus. A campus visit is a feasible excursion for a weekend day trip for a number of participants in the present study. It is also clear that a few of the residential students even live in closer proximity to campus than some of their residential colleagues. Most of the distance students’ colleagues live far away from campus, however. In one cadre, for example, the average student’s commute to campus is 1,195 miles. Additionally, there is not a culture, tradition, nor expectation of making trips to campus other than for the few, required face-to-
face class sessions. As LaPadua (2003) argued, "It is unrealistic to expect that students who do not come to campus for their education will travel to campus to access student services" (p. 120).

Earlier studies report that a minimum of students, of any stage or status, turn to librarians for assistance with research (OCLC, 2002, 2005; Zabel, 2005; Baker cited in Bell, 2005; Boyd-Byrnes & Rosenthal, 2005; Macauley & Cavanagh, 2000). The present study reveals contrasting findings, however. All distance students interviewed for this research described consulting with librarians, while the majority of residential students, 70%, did the same. As mentioned before, doctoral students' research assignments are substantially more demanding than masters, undergraduate and high school students. It is noteworthy, nevertheless, to emphasize the great distinction in the present results. In view of the observation mentioned above regarding participant distance students' lack of self confidence, Visser and Visser's (2000) complaint about the lack of empirical research on the design of appropriate support systems for distance students warrants attention. Liu and Yang’s (2005) comment that the evolution of information technology has erased the limitations of physical distance should not be interpreted as a sign that all needs of distance students have been met. Comments made by distance students in the present study described above, in fact, reveal that there is more work to be done in terms of making students feel that their needs are met and concerns are considered.

Many earlier studies have found that students tend to turn to the web for information when encountering frustration with library resources. Student
participants in the present study clearly communicated their preference for research tools that would provide academically reliable, peer-reviewed publications. It is particularly interesting that the distance participants voiced such strong insistence on the use of academic quality material. Perhaps the absence of a scholarly environment, easily construed as a validation of their academic quest, generated motivation for them to discriminate more rigorously in their selection of resources for their literature reviews.

In contrast with past research that has shown distance students’ preference for the use of their local public or community college libraries (Kascus & Aguilar, 1988; Stasch, 1994; Shouse, 1995; Cassner & Adams, 1998; Unwin, Stephens & Bolton, 1998; Dew, 2000; Tipton, 2000) the current findings describe a minimal use of non-home-university resources. In fact, residential and distance student participants in the current research revealed both equal and minimal use of non- Pepperdine library resources. In this regard, Liu and Yang's (2005) observation finds clear support. Distance students have reduced dependence on local libraries to the point where their usage equals that of their residential student counterparts. A dissimilarity between the two groups not reflected in earlier studies, however, lies in their respective voiced preferences for use of the physical library. Distance students express a longing for the physical library while residential students in this study, by and large, prefer not to utilize the brick and mortar resource. Though this may seem ironic or counterintuitive, in fact it aligns well with the suggestion that local students take campus resources for
granted, while distance students long for the traditional campus resources unavailable to them.

Glaser and Strauss (1967) write that a grounded theory must fit the area concerned, must be readily understandable, must be general enough for application to multiple situations, and must afford the user control over daily and changing situations (p. 237). This study has revealed that distance students' experiences and behaviors during the dissertation literature review process differ from those of residential students. In spite of the multiple advancements in technology that allow for easy electronic communication and access to research resources, the educational experiences of distance students continue to be unique. The following theory, born out of the various observations from the present study, embodies the four characteristics outlined by Glaser and Strauss. The students' separation from the university campus and physical resources, including faculty, librarians and colleagues, results in certain, predictable reactions and experiences. This presumption fits the population and environment studied and is also readily understandable. The generality of the theory, furthermore, allows application of the theory to multiple situations. Distance students may feel as if they cannot take resources for granted. Consequently they will long for access to unavailable resources and often go to greater lengths than their residential counterparts to contact faculty and librarians. They may also experience feelings of loneliness and isolation. Finally, because behavior can be predicted, control is afforded to the user of the theory.
Limitations of the Study

The participants for this study were identified using convenience and purposive non-probability sampling strategies. Pepperdine faculty members were asked to provide lists of doctoral students who either were actively working on, or had recently completed their literature reviews. Though this approach was important in order to ensure that participants of the study had recent experience with research, it may have created a less representative sample of doctoral students. As mentioned earlier, certain limitations are inherent to the non-probability sampling approach. For example, findings from such a study will not be generalizable to a greater population.

The sample of students, furthermore, was relatively small. With ten distance and ten residential doctoral students, the study may not accurately represent the range of opinions and experiences of doctoral students.

Creswell (2003) writes that the researcher using a qualitative design "reflects on who he or she is in the inquiry and is sensitive to his or her personal biography and how it shapes the study. This introspection and acknowledgement of biases, values and interests (or reflexivity) typifies qualitative research today. Creswell continues, "The personal self becomes inseparable from the researcher-self" (p. 182). Because the researcher is both a doctoral student and librarian at Pepperdine University, she is well acquainted with many of the other doctoral students at Pepperdine. As a result, participants who may have known the researcher may have been motivated to offer biased responses during their interviews. Attempts were made to ensure that interviews
were conducted anonymously, so that the researcher did not know whom she was interviewing. As colleagues of the researcher, participants may have been motivated to offer positive remarks about the library, however.

A final limitation of this study relates to the subjectivity of the data, a concern that is endemic to all qualitative studies. Because the data was interpreted by the researcher, student experiences may not be accurately represented.
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APPENDIX A:

Letter to Expert Panel/Pilot Study Participants
Dear Participants of the Pilot Study,

I am doing research for my dissertation on the topic of "Information Seeking Behavior of Doctoral Students." I will, in other words, study students' research preferences and habits.

In order to gather the data for this study I will be conducting interviews with students that should take between 30 and 60 minutes. I am looking to use you as the pilot testers of the interview questions whose feedback will help me refine these questions. I need feedback from you, doctoral level researchers, on both the clarity of the questions and on the methods of interviewing the participants. Therefore, I would be most appreciative if you would look over the questions and make any changes you feel necessary and email me any changes you might like to suggest.

I also would like you to choose how you would like to be interviewed. Your options are the telephone, the software communication tool called Skype, or the educational chatroom facility called TappedIn. Please email me your response by Friday, August 10th and we will set up our meetings. If you choose to participate, each of you will receive a $10.00 Starbucks card as a thank you.

Thank you for your time and participation. I will await your response.

Kind regards,
Maria Brahme
Doctoral Candidate
Pepperdine University
maria.brahme@pepperdine.edu
APPENDIX B:

Interview Questions
Interview questions
1. What happened the last time you began looking for scholarly material for a school project or research paper.

2. So the first step you took to find the information was?
2.a. Did you feel overall that you were successful?
2.b. Did you retrieve enough material?
2.c. How did you know it was enough material? Define enough?
2.d. Did you retrieve the material efficiently enough?
2.e. Were the methods you used to retrieve the information efficient?
2.f. What were some of these methods?
2.g. Were the methods you used for retrieving the information quick and error free?

3. Did you use other sources – of any kind for this project?
3.a. How did you find out about this resource?
3.b. What kind of sources were used?

4. Have you used this resource before?
4.a. With the same success?

5. Did you feel frustrated at any point in the research process?
5.a. What did you do? (try another source? ask anyone for help?)

6. Describe any issues that stopped you from using the library databases.
6.a. How user-friendly was the library web-page?
6.b. What types of problems did you encounter?

7. What stopped you from contacting a librarian when you were having difficulty on the library web site?

8. Did you find it difficult to get an answer from a librarian and if so why?
8.a. What helped you to decide how to proceed after encountering difficulties?

9. Have your colleagues in the program asked you for help with research?
9.a. What did you advise them to do?

10. Who has been the most helpful to you in finding scholarly material for school projects?
10.a. Have you consulted with anyone else? If so, why?

11. Did you feel you would have liked to have help in finding scholarly material?
11.a. Would you have been interested in finding help in doing your research?
11.b. Who do you think you might have received this help from?

12. If you were to give advice to a new student in your program about conducting research, what would you say?
13. If you were to explain to a colleague what defines scholarly material, how would you do so? What would you say?

14. If you were to need help finding scholarly material for a school project, whom would you ask for advice?

15. What does the phrase “library databases” mean to you?
15.a. If there are library databases that you like to use, please name them.
15.b. What do you like about these databases?

16. How comfortable are you with using…

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<table>
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<tr>
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<tbody>
<tr>
<td>a. Microsoft Word</td>
<td>N - CF - E</td>
</tr>
<tr>
<td>b. Internet search engines (eg. Google or Yahoo)</td>
<td>N - CF - E</td>
</tr>
<tr>
<td>c. Library databases</td>
<td>N - CF - E</td>
</tr>
<tr>
<td>d. Free time technology (i.e. mySpace, blogs, chat)</td>
<td>N - CF - E</td>
</tr>
</tbody>
</table>

(N) Novice – Need to follow a direction sheet
(CF) Computer friendly – Can use without instruction but could not teach,
(E) Expert – Could teach to colleagues.
APPENDIX C:

Letter of Informed Consent
Participant Consent Form

Date

Dear Doctoral Student,

I want to thank you for your consideration in participating in this study. With this letter, I am providing you information regarding your participation in this study which is in partial fulfillment of the requirement for the doctoral program in education at Pepperdine University. I am conducting research on the *Information seeking behavior among doctoral students*. Specifically, I will be exploring and identifying the differences in research behavior and research resources used between doctoral students enrolled in distance learning programs and doctoral students enrolled in residential educational programs.

Your name has been selected via a purposive sampling method as the current phase of your doctoral work requires your current or very recent engagement in research activity. Your voluntary participation is greatly appreciated.

The data gathering process entails interviews of 30 minutes to one hour duration. A number of steps will be taken to protect your identity. Your interview will be scheduled by a colleague of the researcher. Thus, the researcher will not know with whom she is speaking. Additionally, you will be encouraged to use a pseudonym for the interview. Finally, you will be able to choose one of three methods of communication for the interview process: 1. The online chat facility called Tappedin, 2. The web-based, free communications software called Skype, or 3. A standard telephone. The first two options allow you to create a fictitious identity for yourself. If you choose to a telephone, you will not be asked what your name is, but you may choose a pseudonym if you wish to be called by a name.

To ensure accuracy in the data collection, I will ask for your consent to record the conversation. Tappedin automatically produces a text transcript of the conversations. The Skype dialog will be recorded with software that saves the conversations as an MP3 file. Finally, a tape recorder microphone will be attached to the telephone receiver to capture interviews employing this tool. During the interview, you may request to stop or resume recording. Furthermore, you can selectively answer the interview questions.

The potential risk of this study is minimal. There are no known risks at this time. Discomfort associated with this study is no more than that experienced during the normal course of a day. The potential benefits of your participation include providing relevant data to the field of research in higher education and information & library studies, to Pepperdine University Libraries and to library institutions of higher education in general.

Participation is voluntary and you are not compensated for your time. However, a
The drawing will be conducted among participants upon the completion of data collection for two $25 Borders or Amazon Bookstore gift cards (the winner may choose either). The drawing will be conducted by an impartial third party and will not allow a connection to be made between data collected and specific participants. Additionally, since this is a completely voluntary process, you may elect not to participate or elect to participate and later withdraw with no consequences.

The identities will remain confidential as the names in the will be replaced with codes. The investigator will take reasonable measures to protect the identity of the participants. The investigator will be responsible for safeguarding the records and all documents will be placed in a locked cabinet. The confidentiality of the records will be maintained in accordance with applicable state and federal laws. If you have any questions, please contact Maria Brahme at (323) 661-4509 or by email at maria.brahme@pepperdine.edu. You may also contact Dr. Cara Garcia, Faculty Advisor, at (310) 568-5600 or by email at cara.garcia@pepperdine.edu.

Please acknowledge your understanding and voluntary participation in this study by signing, dating, and returning this consent form. Once again, thank you for your willingness to participate in this study. Your time is greatly appreciated.

<table>
<thead>
<tr>
<th>Signature of Participant</th>
<th>Date</th>
</tr>
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<tbody>
<tr>
<td>I understand to my satisfaction the information stated above regarding my participation in this study. My inquiries have been addressed. I have received a copy of this informed consent form which I have read and understand. I hereby consent to participate in the research described above.</td>
<td></td>
</tr>
</tbody>
</table>

It is assessed that the participant listed above has the legal capacity to do so and is voluntarily participating in this study. I have explained and defined in detail the research procedure in which the subject has consented to participate. Having explained this and answered any questions, I am cosigning this form and accepting this person's consent.

<table>
<thead>
<tr>
<th>Maria Brahme – Principal Investigator</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have explained and defined in detail the research procedure in which the subject has consented to participate. Having explained this and answered any questions, I am cosigning this form and accepting this person's consent.</td>
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APPENDIX D:

List of all codes developed for the study
A Mentor help program advised to see librarian advises collaborating with colleagues advises use of coach or mentor advises use of databases advises use of google advises use of internet advises use of librarian advises use of library advises use of online library ask librarian for help barrier to getting help from librarian buys own subscriptions computer expert computer friendly computer novice considered many databases defines scholarly material desires access to physical library desires easier contact with librarian desires more knowledge about services Distance Learning fabulous distance student wants more help don't know where to go don't know who is librarian expresses confidence in research ability expresses lack of confidence in research... f2f interactions important female frustration getting articles frustration getting books frustration with process google limitations google not used help from advisor or chair help from coach or mentor help from faculty help from non Pep colleague help from non pep faculty help from other help from Pep colleague help from website links helped Pep colleagues identifies databases accurately
identifies scholarly material accurately
influenced choice of resources
influenced to choose resources
internet limitations
library databases difficult to use
library databases easy to use
library website user friendly
little use of physical library
lonely distance student
low expectations
male
miles from campus
misidentifies library databases
misidentifies scholarly research
misinformed about library research
misinformed about library services
need online library
need physical library
no help from advisor
no help from colleagues
no help from librarians
no help from pep faculty
no problem accessing librarian
no problems accessing databases
no use of google scholar
no use of physical library
old school libraries limiting
online library important
online research
overwhelming research results
pep library doesn't have all I need
Pep library had what I needed
pleased with library services
pleased with process
pleased with research results
praise for google
Praise for the librarian
prefers online research
programdistance
programET
programOC
programOL
programresidential
purchased books
sees need for more help with process
start with dissertation
start with Google
start with google scholar
start with libdatabases
start with pepperdine library website
success means
talked to people
tech communication important
tech communication limiting
trouble getting dissertations
trouble with database access
trouble with getting books
turn to the web
use of Amazon
use of article ref list
use of author
use of books
use of electronic books
use of google
use of google scholar
use of interlibrary loan
use of internet
use of non pep websites
use of one-stop
use of own books
Use of Pep library databases
use of pepperdine library website
used distance student services
used library at work
used other libraries
used other libraries online
used other libraries' books
used pep interlibrary loan
used pep library books
used physical library
you are your own barrier
APPENDIX E:

List of all codes developed for sub-research question A
To whom do students turn for assistance with research?

A Mentor help program
advised to see librarian
advised to see librarian
advises use of librarian
advises collaborating with colleagues
advises use of coach or mentor
advises use of librarian OR
ask librarian for help
ask librarian for help OR
distance student wants more help
help from advisor or chair
help from faculty
help from coach or mentor
help from non Pep colleague
help from non-pep faculty
help from Pep colleague
help from pep faculty
helped Pep colleagues
lonely distance student
no help from advisor
no help from colleagues
no help from librarians
no help from pep faculty
Praise for the librarian
talked to people
use of author
APPENDIX F:

List of all codes developed for sub-research question B
b. **What are the preferred research resources?**

advises use of databases
advises use of google
advises use of internet
advises use of library
advises use of online library
buys own subscriptions
considered many databases
desires access to physical library
expresses confidence in research ability
frustration getting articles
frustration getting books
google limitations
google not used
help from website links
identifies databases accurately
identifies scholarly material accurately
internet limitations
library databases difficult to use
library databases easy to use
library website user friendly
little use of physical library
misidentifies library databases
misidentifies scholarly research
misinformed about library research
misinformed about library services
need online library
need physical library
no problems accessing databases
no use of google scholar
no use of physical library
old school libraries limiting
online library important
online research
pep library doesn't have all I need
Pep library had what I needed
pleased with library services
pleased with research results
praise for google
prefers online research
purchased books
start with Google
start with google scholar
start with libdatabases
start with pepperdine library website
trouble with database access
turn to the web
use of Amazon
use of author
use of books
use of electronic books
use of google
use of google scholar
use of interlibrary loan
use of internet
use of non pep websites
use of one-stop
use of own books
Use of Pep library databases
use of pepperdine library website
used distance student services
used library at work
used other libraries
used other libraries online
used other libraries' books
used pep interlibrary loan
used pep library books
used physical library
APPENDIX G:

List of all codes developed for sub-research question C
c. What, if any, are the perceived barriers to consulting with the university librarians?

barrier to getting help from librarian
desires easier contact with librarian
no problem accessing librarian
pleased with library services
praise for the librarian
sees need for more help with process
lonely distance student
APPENDIX H:

List of all codes developed for sub-research question D
d. What, if any, are the perceived barriers to using library resources?

barrier to getting help from librarian
desires more knowledge about services
don't know where to go
expresses lack of confidence in research
frustration getting articles
frustration getting books
frustration with process
library databases difficult to use
Lonely distance student
misidentifies library databases
misinformed about library research
misinformed about library services
No help from advisor
No help form colleagues
no help from librarians
No help from pep faculty
Pep library doesn't have all I need
Sees need for more help with process
trouble with database access