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This study describes a survey conducted with participants in the distance education program at the University of North Carolina. The study was conducted to learn more about the library use and needs of this student population in order to determine the library's plan of service to this student population. While distance education students are traditionally much older than the Millennial generation, the students in this study were found to favor electronic resources and be overall highly confident in their search abilities, two characteristics until now attributed to the Millennial generation. The students named Google and the UNC Libraries Web page as equally important to their research, but acknowledged using Google much more frequently than the library page. These findings suggest that the Millennial distinction may not be due to a generational divide, as previously reported, but rather due to technological immersion.

Headings:

Distance education

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Use studies/Internet

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College and university libraries/Services to graduate students

INFORMATION SEEKING BEHAVIOR OF DISTANCE EDUCATION STUDENTS

by
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Introduction

In the past ten years, distance education offerings have flourished across the nation. Institutions such as the University of Maryland's University College and the University of Pennsylvania's World Campus have made earning a degree more feasible for the many people across the country who have families and jobs in addition to the desire to further their education. In 1996, it seemed like the University of Carolina at Chapel Hill would be following this pursuit of equality in education. Chancellor Michael Hooker gave an address to the Faculty Council, stating that digital technology would bring about revolutionary changes to higher education in the form of distance education. He went on to speak of the possibilities for access distance education could bring, saying “we have a responsibility to do what we can to make education available to citizens in the state who would not otherwise have access to education at Chapel Hill for various reasons” (*Transcript*, 1996).

Unfortunately at the University of North Carolina, distance education offerings have never become a central priority for the school’s administration. Although distance courses have been offered through UNC-Chapel Hill since the late 90s, as recently as September 2006 UNC’s Provost, Bernadette Gray-Little, was quoted as saying that “the ‘big question’ to be answered is whether Carolina is interested in offering undergraduate degree programs online” (*Journal of Proceedings*, 2006). In a statement later that year, Gray-Little “cautioned against extensive use of online courses for credit by regularly

enrolled students,” citing a desire to give all on-campus students similar experiences as her reasoning. This hesitation was echoed later in the school year by Student Body President James Allred, who voiced his concern over offering Carolina degrees online: “To say that someone can earn a bachelor’s degree or master’s degree without setting foot on campus cheapens the degree earned by someone who has invested themselves in their education” (Trowbridge, 2007).

Although the administration has frequently paid lip service to the idea of providing access to the people of North Carolina, concerns like those expressed by Allred prevent the administration from setting up a cohesive distance education program. This policy was exemplified in 1998, when a faculty council committee speaker, Tony Passanante, was directly asked to consider policies toward distance learning courses. Passanante responded, “I think that clearly that is coming. And that’s going to be necessary. We didn’t feel compelled to address it this year” (*Transcript*, 1998). The council meeting minutes provide a clear view of the administration’s view on distance education, continually passing the heavy lifting on to the next council or committee.

As a result, distance education offerings at the University of North Carolina at Chapel Hill remain largely unorganized. While there is a department of distance education, each academic department is responsible for its own distance education offerings and can offer or not offer as it sees the need. Most departments that are identified as distance education programs on campus are simply programs that offer online courses; it is not possible to get an online degree from many of these programs. Because of this lack of oversight, it is difficult to obtain information about the distance education population. Just as each department maintains its own course offerings, so

does each department keep, or not keep, records of class enrollment and student information. Due to these difficulties, UNC Libraries has never attempted to survey the distance education students regarding their information needs, nor have library services been marketed directly to students learning at a distance.

It seems the distance education tide at the University of North Carolina may be turning. In early 2007 the UNC Board of Governors, lead by new UNC System President Erskine Bowles, made distance education a priority in their 2007-09 Budget Priorities. Third on this list of priorities, the Board of Governors requested the University of North Carolina Online, envisioned as a portal to all online courses offered through the sixteen UNC-system schools. In February, Governor Mike Easley honored this UNC budget priority and requested two million dollars for the UNC Online program. In an effort to uphold this commitment to distance education, UNC Libraries has set out to learn more about the distance education community and the services the library can provide to this population.

Literature Review

Distance Education Services

At the advent of the new millennium and in the midst of the information age, distance education underwent rapid and widespread change (Ault, 2002). Information was now capable of being accessed faster and with more ease, and that meant more people could have the benefit of information as well as that which often follows, education. Distance education programs on university campuses grew by leaps and bounds leaving many libraries, unfortunately, unprepared. The topic took on enough significance that the Association of College and Research Libraries (ACRL) developed a set of standards specifically for distance education populations, stating among other things that institutions with a distance learning component should designate a member of their staff specifically to serve this growing population (ACRL Standards and Guidelines, 2000). While the basic needs of distance education students are the same as those of traditional students, Barron notes that students truly at a distance (more than an hour's drive from campus) have special information needs and access concerns that differ greatly from those of on-campus students. Those who are truly at a distance aren't able to just drop by and talk to someone, pick up something that is not available electronically, or receive in-person instruction (Barron, 2002). Papers written during this early period focus mostly on the traditional recommendations to any librarian interacting with a new population in the information age: identify your user and their needs, get ready for increased web usage, anticipate the geographical barriers to your collection (Ault, 2002;

Jones, 2002; Baird, 2002). Carol Goodson (2001) calls for librarians to learn their distance learning population, saying:

Because the provision of library services to remote users can be so involved, the library staff must understand distance learners and adult learners; librarians must create policies and procedures specific to distance learning; they must coordinate program components such as document delivery and reference services; they need to market their services; they need to continually evaluate the best information resources; they must create and maintain Web sites; and they must collaborate with faculty, administrators, and other librarians. (Quoted in Cooke, 2004)

It is evident from these papers that librarians felt that they were being faced with an entirely new user group and turned to the old fail-safes in order to attempt to understand this new and largely invisible population.

As distance education students were understandably difficult for the libraries to contact in these early days, several papers did, like Goodson, recommend that librarians reach the students by making connections with faculty (Markgraf, 2002; Feldheim, 2004). While it was certainly not a new idea to cultivate faculty-librarian relationships, this suggestion took a large portion of the burden of finding these students out of the librarian's hands without causing excessive stress on any staff. Additionally, as Markgraf points out, the increased faculty-librarian collaboration lead to the students' enhanced understanding of library research, and to greater opportunities for collaboration with faculty, both in the classroom and in publishing. She mentions when discussing her role in assisting students with computer problems, "Students who had consulted [electronically] with the librarian regarding access problems were encouraged to contact her again with research-related questions, and many did" (Markgraf, 2002).

While this may not seem to be a novel idea at first glance, let us keep in mind that it is during this period that the communication literature is largely preoccupied with the

comparison between traditional and electronic communication. An early study (Hollingshead, 1993) found that, while groups meeting online seemed to make decisions as effectively as those meeting face-to-face, they did not perform as well in engaging in negotiations and in intellectual tasks. This study seems to encapsulate most of the attitudes and opinions of libraries and school administrators during this early period – that while face-to-face interaction was certainly preferred, electronic communication would do in a pinch. Indeed, a 2005 study found similarly, stating that computer-mediated communication inhibited collaboration in the groups studied (Brett, 2005). Libraries, according to these studies, were employing sub-standard methods in order to reach this new and growing population of users. It should be no wonder, then, that much of the library literature focuses on the barriers to services experienced by distance education students (Casey, 2002). Some seemed to feel, like Barron, that distance education students were at a distinct disadvantage simply by being at a distance from the library. In Cooke's 2004 paper detailing the history of distance education librarianship, she writes that there is little the library can do to make up for the loss of the physical library to the distance education student:

While libraries do their level best to provide equivalent services, there is only so much that can be done electronically or through postal mail. There just is no substitute for the physical archive that is a library building. In a traditional academic library collection, there are non-electronic resources, reserve materials, audiovisual items, and historical and specialized collections that are not cataloged, cannot be loaned, and cannot be browsed on the shelves—these items are essentially inaccessible to students using the library from a distance. Also, in many cases, point-of-need assistance and immediate answers to questions are also not available to remote users.

As distance learning environments continue to adapt and grow, librarians are continually attempting to overcome this disadvantage, employing new technology and a wide variety of methods to make services provided to distance education students equivalent to those provided to traditional students. In Kazmer's 2005 paper on community-embedded learning, she proposes the model of embedding learning within already existing communities, allowing people to learn together at a distance and easily share experiences. Several librarians and libraries are adopting a distance education model in developing their own instructional materials for students. Sacchanand and Jaroenpuntaruk (2006) write of the use of the distance education model in getting a research training pack, aimed at library support staff and students, online and in the realm of the user.

In the present time, discussion is moving away from discovering the needs of the distance education student and towards evaluating the services provided to these students; a narrow distinction, but an important one nevertheless. Articles such as Webb's 2006 guide to putting instruction online and evaluating it will become important texts for current librarians. Likewise, Maness' 2006 article on evaluating the use of streaming video library instruction shows both the capacity for change within the library and the focus on evaluation of services.

Information Seeking Behavior of College Students

In 1992, Gary Marchionini wrote, "humans will seek the path of least cognitive resistance." The current research on information seeking behavior among college students reflects just that. A 2001 study of student research behavior found that,

“students use the web for everything; they may spend hours searching or just a few minutes; searching skills vary and students will often assess themselves as being more skilled than they actually are; and they will give discussion list comments the same academic weight as peer-reviewed journal articles.” Adopting a somewhat more ominous tone, Litten and Lindsay’s study (2001) concludes that today’s students are typically very comfortable with technology, have shorter attention spans, a low threshold for boredom, resist memorization and busy work and prefer action to observation.

It is around this time period that the research begins to focus on a group of students called the “Millennials,” a new generation that began entering colleges and universities for schooling around 1998. According to the literature, this is a generation that exhibits unique characteristics, derived largely from the fact that their formative years have been spent almost entirely in the information age (Holliday & Qin, 2004; Partridge & Hallam, 2006). Partridge and Hallam note that “it is generally accepted that members of this generation were born between 1980 and 2000,” putting the current age of Millennial college students as between roughly 18 and 27. Brown, Murphy and Nanny suggest in their study of information literacy that Millennial students are overconfident of their search abilities, as they mistake tech savvy for information literacy (2003). In a study of Millennial search habits, Holliday and Qin reported that the students “are quite capable of using technology, but they are less skilled at the ‘inputs,’ or the critical thinking and questioning that must happen as part of the process of inquiry.” It is further noted that students of this generation “expect the research process to be easy, like Google. As such, they expect to be independent in the process and they do not seek help from librarians.”

The Google phenomenon is one that recurs in the literature regarding information seeking behavior, and it has practically become synonymous with “information illiterate” in the library world. A 2005 study (Griffiths & Brophy) found that 45% of students identified Google as their first resource when locating information; the next most highly used starting point was the university library OPAC, which was used by 10% of the sample. After completing the research task required in the study, one student said, “It was easy when I went back to Google. Ingenta just messed me up.” (It isn’t apparent if the student was able to find relevant information through Google.) Griffiths and Brophy’s key findings echo the concerns most often voiced by librarians: students find it difficult to locate information and resources, and trade quality of results for effort and time spent searching. They also note that student use of search engines influences their perceptions and expectations of other electronic resources; for instance, using Google is easy, therefore using library resources should be as well. In a study of student use of library databases, Kim (2006) found that convenient access was an important determinant of database use. “[S]ome students prefer open Internet searches to Web-based subscription databases simply because of their convenience.” Kim goes on to note that competing with Internet searching must be a priority for libraries in the future: “To compete with open Internet searches and facilitate use of Web-based subscription databases, it is crucial for libraries to increase the convenience of access and awareness of the existence of the databases. Placing a link to the databases on the first page of library Web sites and shortening the path to connect to each database will help enhance accessibility of subscription databases.” Additional evidence suggests that this is not a uniquely American phenomenon. Song (2005) found in her study of information seeking

behavior that 6% of international business students reported that they began at the university library Web page to conduct research; the remaining 94% reported that they started with either Google or Yahoo. This research indicates that behavior attributed to the Millennial generation is worldwide.

And yet, students may be willing to change their habits. In a study of library instruction provided to college students, Ren (2000) noted that the students, on average, reacted positively toward acquiring information search skills. If this is the case, perhaps it could be assumed that the phenomenon being recorded in library literature is due to less of a generational defect, and more to a lack of proper instruction. Ren goes on to recommend that, “reference librarians should help students to help themselves to become effective online searchers. We need to realize that only the effective electronic users will benefit most from the new information technologies for their academic career and beyond.”

Information Seeking Behavior of Distance Education Students

There have been a series of studies conducted regarding the information resources used by distance learning students. In Jaggen, Tallman and Waddell, the researchers learned that, in spite of the wide variety of materials available to distance learning students, more students used only the instructor-provided materials than any other source available (1991). In another survey, Melinda Stasch noted that while the public library was used most often by distance education students for books and journals, the students surveyed did use their home academic library as their primary source for article databases (1994). The students identified convenience as the most important

factor in their information source selection. Similarly, Shouse reported survey findings that indicated higher overall usage of the public library by distance learning students, with convenience cited as the most important factor in information source selection (1995). Another survey of distance learning faculty and graduate students found that the libraries of other institutions were used with more frequency than the library at their own institution (Cassner & Adams, 1998). While the type of library selected by the distance learner in these surveys differs, the convenience of the library is continually the deciding factor for the user.

In a comprehensive study conducted in the United Kingdom, distance learning students and faculty were found to use the public libraries more frequently than the library of their home institution, citing time, distance, and lack of institutional collaboration as the factors at work in their decision (Unwin, Stephens, & Bolton, 1998). A 2003 study found that distance students were following the same trends that had been observed in the traditional student population; namely, that “part-time students' usage patterns have changed and now favor the use of electronic resources (the Internet, in particular) and also mirror trends observed in traditional student behavior toward libraries and library resources in many important respects.” In this study of distance education student search behavior, Kelley and Orr also noted that, “the technologies may change but, at the same time, students overwhelmingly prefer to have instruction delivered in a format that is accessible off-campus and offers them flexibility in when they receive instruction.”

This study found a dramatic increase from earlier surveys in the number of students who never or rarely used the library for course assignments (Kelley & Orr). In

the first significant study after the Google boom, the researchers also noted a strong preference for electronic resources over print. Regardless of the user's choice of information resource, most students were generally satisfied with the level and quality of service received from library staff or the library in general (2004). Likewise, in a 2004 study of the needs of distance education students, McLean and Dew found that electronic resources were favored over instruction: "Students tended to rank most resources and services favorably, but at both institutions, they found more value in technology than in instruction—students tended to rank electronic resources quite high, while they ranked instructional services significantly lower."

A survey of Academic Research Libraries (so identified by ALA membership) found that only 21% of those libraries surveyed employed a full-time distance education librarian; an additional 35.5% employed a librarian that spent part of his/her time on distance services (Yang, 2005). In a 2004 study, a random sample of graduate students in distance learning programs were surveyed regarding their use of information resources, specifically focusing on the factors that lead to information resource selection. The study found that students overwhelmingly used the internet as their primary source for information and cited speed as their number one concern in selecting a primary information source (Liu & Yang). Additional data from this survey suggested that only 28.8% of graduate student use their home institution libraries' webpage as their primary information source. The survey used in this study was used as a model for the web questionnaire used in the current research.

The 2000 ACRL *Guidelines for Distance Learning Library Services* strongly recommends that students be surveyed to determine library service needs and user

satisfaction. To date, UNC distance education students have not been surveyed about their service needs or satisfaction with library services. Regardless of this recommendation, in a time when technology is changing rapidly and student attentions are the subject of intense competition, it is imperative that the library know the users it is serving and make the effort necessary to best serve its users. This survey aims to make the needs of distance education users known to the library and examine what is necessary to serve this population.

Methodology

This survey was conducted using a web-based self-administered survey questionnaire that was designed to assess the process of information seeking in distance education students. (See Appendix A for the survey instrument used.) This study was developed in order to assist UNC University Libraries in gaining an understanding of the services needed by distance education students at UNC.

The survey questionnaire was developed based on two existing questionnaires: a study distance education students conducted in 2002 (Liu, 2004), and an unpublished survey created to assess the information seeking behavior of scientists at UNC. The questionnaire consists of thirty-one questions, twelve of which were relevant to the student's research process, eight were designed to gain an understanding of distance classes, eight were used to gather non-identifiable demographic information, and three open-ended questions solicited the participants' impressions of UNC Libraries. Questions were primarily multiple-choice, with most using a Likert-like scale. The survey was tested by the researcher before being activated for use by study participants, and was approved by the UNC Institutional Review Board.

Recruitment for this study was conducted through each university department office. As the department of distance education keeps no overall record of the students enrolled in distance classes, each department was contacted by the researcher to ascertain if such a list did exist and if they would be interested in participating in this study. The available information lead this study to be limited to only those students currently

enrolled in distance education courses as of spring semester 2007. The departments of Nursing, Journalism and Communication, the Trans-Atlantic Masters Program, and Carolina Courses Online all expressed an interest in participating in the study.

The survey was sent to all enrolled distance students in the departments of Nursing, Journalism and Communication, and the Trans-Atlantic Masters Program. Due to technical difficulties in the Carolina Courses Online office and limitations in the survey software, a sample of 90 students from Carolina Courses Online was used. The random sample was selected by the staff of Carolina Courses Online; a list of 90 students was supplied to the researcher. The study population consisted of the 91 distance graduate students enrolled in Nursing, Journalism and Communication, and Trans-Atlantic Masters Program courses, and a 90 undergraduate student random sample from Carolina Courses Online. The recruitment message was sent to all 181 students. 19 viable responses were collected from the participants, which represents approximately 10.5 percent of the study population.

While it was disappointing to get such a low response rate for this study, other studies involving distance education students reported similarly low response rates. Song's 2005 study of international business students reported a 32 percent response rate, and Kelley's 2003 study of distance student use of electronic resources reported a response rate of 30 percent. McLean and Dew's 2004 study of distance education student library needs reported a similar response rate of 11 percent. Due to the time restrictions placed on this study, the survey was only available online for a period of two weeks, one of which coincided with spring break, which may partially account for the low response rate. Like McLean and Dew, the researcher is encouraged in spite of the low response

rate by J.A. Krosnick, who wrote that “recent research has shown that surveys with very low response rates can be more accurate than surveys with much higher response rates” (Krosnick, 1999; quoted in McLean and Drew).

In March 2007, a recruitment message was sent to the 181 distance education students identified for participation by their department, which requested participation in the study, explained consent, and provided a link to the electronic survey. (See Appendix B for letter of implied consent sent in email.) This recruitment and consent email message was approved by the Institutional Review Board on March 13, 2007.

This message was sent to all students identified for participation in the study via a blind mass mailing. The survey remained open for two weeks. A second reminder message was sent 3 days prior to the survey’s closing date, after which all records containing the participant’s email address were destroyed. Students who elected to participate in the survey accessed it by clicking on the survey link in the recruitment email message.

There was no inducement for participation in the study, nor did the participants receive anything for their participation in the study.

Analysis

Initial analysis of the results pertaining to information seeking behavior leads to some surprising conclusions. In direct contradiction to the published literature, 82 percent, or 13 of 16 respondents, reported that they use the UNC Library Web page to access information needed for class research (3 respondents indicated that they did not need to do outside research for class). 47 percent, or 8 respondents, reported use of other websites; Google was not specified as an option, so it is possible that some respondents who would have selected Google did not think to do so here. 47 percent also selected in-person use of a physical library space as a source for information, with 3 responses each for use of a public library and the physical UNC Libraries, and 4 reporting use of other academic libraries. This question asked students to select all of their sources of class information, rather than simply the source they used most, which could account for part of the contradiction with the published literature. However, it remains evident that the library website is by far the most popular source of information to use for doing class research. As use pertaining to class assignments was specified, it may be that distance education students are being nudged by their professors or others in their program toward using the library website over other sources of information. Some responses to the open-ended questions indicate that scholarly research skills are being emphasized in some distance classes. One student says that, “Teaching the concept of ‘search’ before you ‘research’ should be mandatory for all students (see [professor’s] class notes...).”

Not as surprising was the incidence of using web-based resources for class-based research. The two most frequently used sources, the Library Website and other Websites, are both electronic resources. In further support of the preference for electronic resources, 70 percent, or 12 respondents, reported that they used web resources for their class weekly, while the remaining 30 percent, or 5 respondents, reported that they used web resources for class every day. As 90 percent of respondents indicated that their class meets solely online, this high frequency of use is hardly surprising. One would expect students that meet solely online to use web resources quite frequently, perhaps even more frequently than print-based resources.

There is an inconsistency between the answers of the first question, which asked which types of resources were used in class research, and the second question, which asked how frequently the students used web resources. Several students did acknowledge using electronic resources on a daily or weekly basis in the second question, but only reported in-person use of libraries in the previous question. This could be a result of bias in the survey population. Students were informed in the implied consent letter that this survey was being conducted on behalf of UNC Libraries, and this knowledge may have caused some students to subconsciously skew their initial responses toward library use. The second question's focus solely on web resources may have encouraged students to record their web use for research. The first question may also have seemed ambiguous to some users – those who go to a library and then use their online databases may have been unsure as to which heading that would fall under, other libraries or other website.

The tendency of distance education students to favor electronic resources was emphasized further in the next question, in which students were presented with a list of information sources and were asked to estimate their use of the resources on a Likert-like scale. Figure 1 shows the frequency of information resource use as reported by the distance education students.

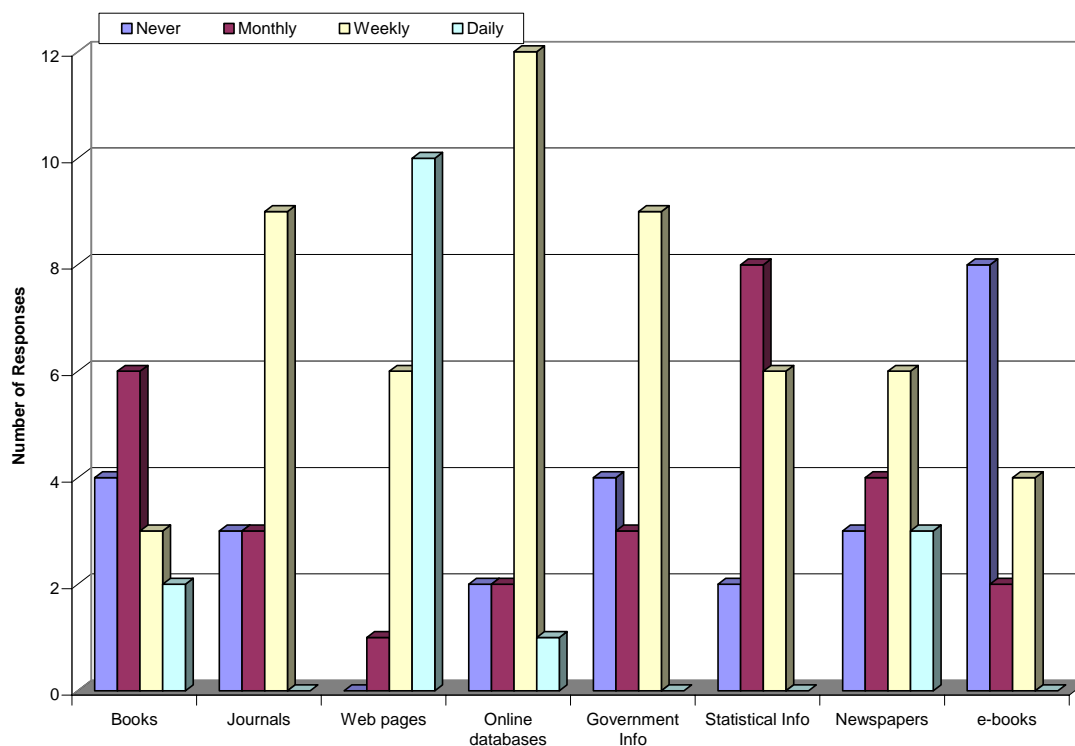


Figure 1: Use of Information Resources

Web pages have the highest number of daily uses, with 10 students claiming that they are used on a daily basis. Online databases claim the highest number of weekly uses, with 12 students identifying them as being used on a weekly basis. It is worth noting that both of these highly favored resources are available solely electronically. Books, a print resource, enjoy much more sporadic use among distance education students, comparatively. 6 students, the highest consensus, claim to use books in research on a monthly basis, with 4 students claiming that they never use books in their research. In

contrast to the other electronic resources available, e-books seem to be an unfavorable information resource –most students (8 of 14) reported never using them, and they are used even less frequently than print books. This could be attributed to the general observation that most people prefer not to read information on their computer. Although most people now want to locate and have access to information electronically, reading is still largely done in print. While it may be reasonable to locate and print a journal article from the Web, it is difficult to justify printing an e-book, and in most cases it is not even a possibility as e-books are often heavily copyright protected. The low use of e-books could also be attributed to the limited number of e-books available to UNC-affiliated users. UNC Libraries has recently purchased access to two large collections of e-books and given prominent position to the collection on its E-Research Tools Web page. It will be interesting to see if use of e-books increases after the purchase of this collection, and may be a good place to begin future studies.

It should be noted that there is an inconsistency of responses in this question also; in the previous question regarding web-based research, only 5 students reported using web-based resources daily. In contradiction to this earlier question, 10 students reported using Web pages daily in the present question, in which students were asked to report their usage. This discrepancy seems to be most attributed to human error; one assumes that the students were better able to judge their use of electronic resources when placed in the context of other resources they might use. Students could also still have been biased towards reporting use of library services, since they were told in the consent letter that this survey was being conducted on behalf of UNC Libraries.

The preference for web resources becomes even more pronounced when the students were asked to identify the five most important resources for their research. This question was open-ended, and students were able to submit the names of 0 to 5 sources as they desired. The submissions were analyzed qualitatively and like responses were grouped for analysis (i.e., E-reserves, UNC databases, and UNC library page were all grouped as Library Web pages). The results for this question may be seen in Figure 2.

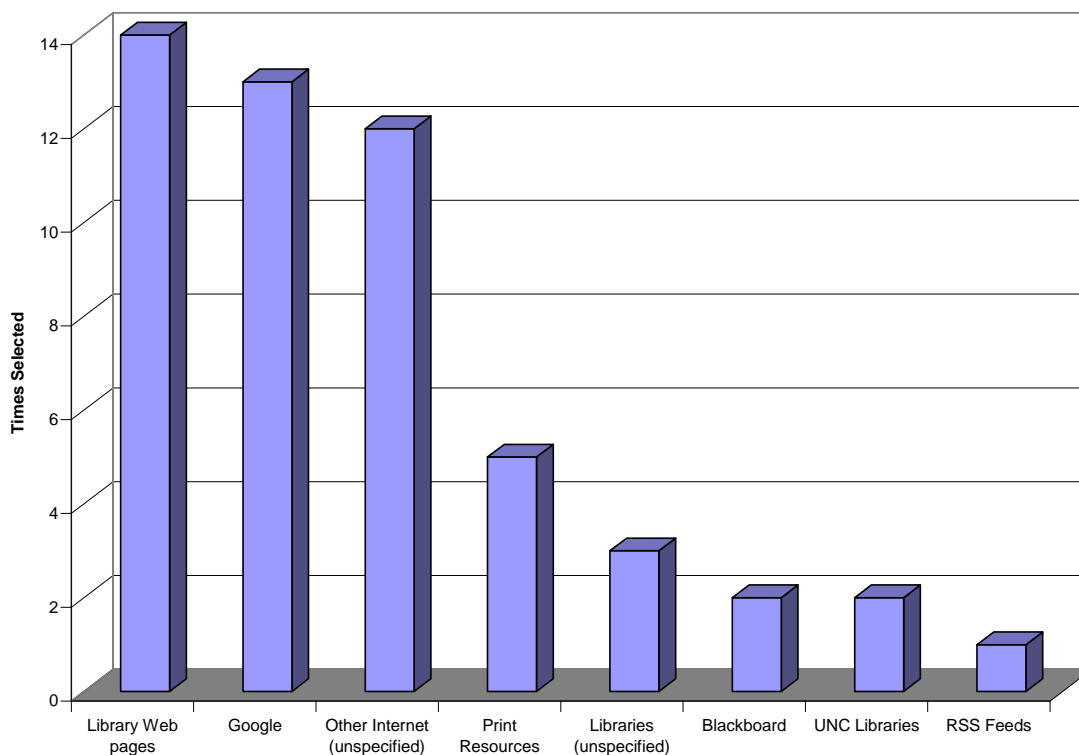


Figure 2: Most Important Information Resources

The top three identified resources, Library Web pages, Google, and other internet, are all electronic resources, and they are clear favorites over the next preferred print resources and libraries. Again, this preference makes sense when one considers that most of the distance education students are taking classes that are online-only; if one chooses to engage in learning in an online-only environment, it follows that they would then prefer to engage in research in a similar manner. It is interesting and worth noting that UNC

Library Web pages were identified by distance education students as an important resource as frequently as Google. While previous studies have suggested that students use Google and not the library, the results of this survey indicate that this is not the case. In another contradiction with the published research, distance education students here indicate that the library's online presence is just as important in their research as Google. Among the distance education population, this previously recorded overwhelming preference for Google just does not seem to exist. When asked from which screen, Google's search page or UNC Libraries' homepage, they would rather begin the search process, 12 of 18 students (66.7 percent) indicated that they would prefer UNC Libraries' home page as their starting search screen.

Interestingly, while students indicate the Library Web page and Google are equally important search tools, students reported their use of these tools as drastically different. After providing their most important research tools, students were then asked to report how often they used the tool indicated. The results of this series of questions are shown in Figure 3.

While Google and the library Web pages were selected as important with equal frequency, Google is used much more often, with most respondents indicating that they use the search engine on a daily basis. Conversely, the library Web pages are reportedly used much less frequently, with respondents indicating that they are used only weekly or even monthly. While the two resources are equally important to a student's research process, Google is used with much more frequency than the library's Web pages. This could be explained, in part, by Google's simplicity. Google's interface makes searching across many different types of information easy and fast. With just one search box and

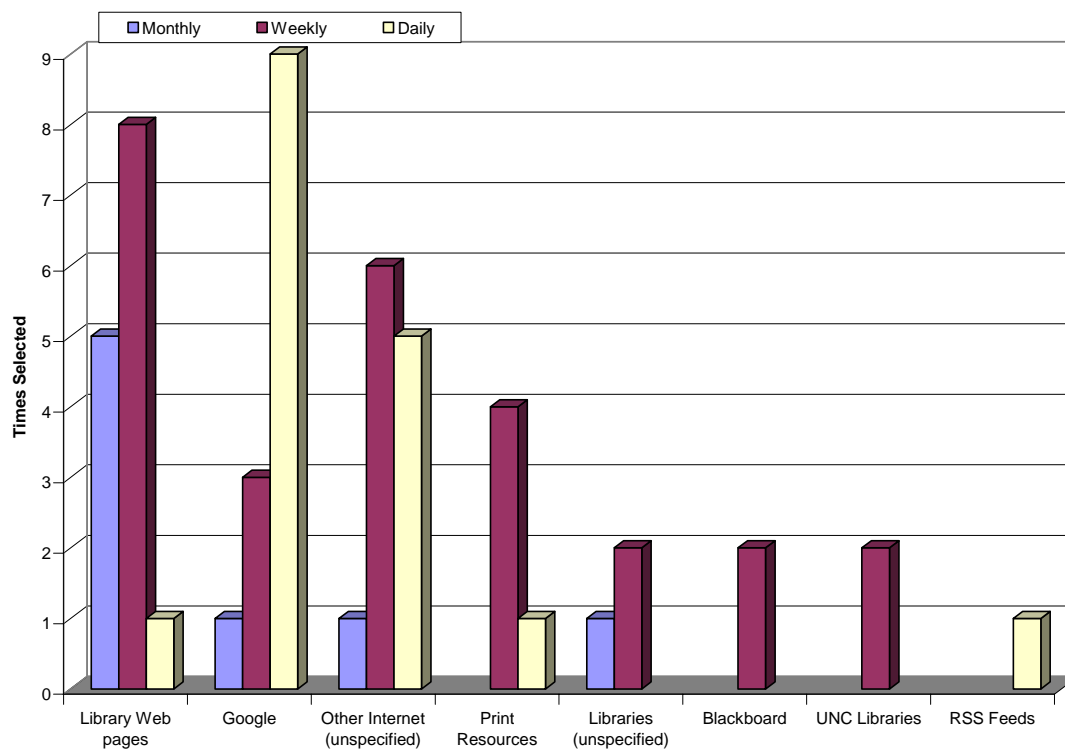


Figure 3: Use of Selected Information Resources

the ability to perform searches for both the sophisticated and beginning researcher, distance education students may find Google's ease of use outweighs the library's recognized authority. Furthermore, the kind of searching that Google specializes in, namely quick answers to specific questions, may be a better fit for the kind of day-to-day information seeking in which distance education students are likely to engage.

This hypothesis is supported by student comments that were solicited in a series of open-ended questions. In the first open-ended question, students were asked to identify the shortcomings of UNC Libraries and propose any new or different services they would like to see provided. One student wrote, when referring to article databases, "They just feel more cumbersome than, say, Google to find information." Another student seconded the first student's assessment of the library databases, writing the following:

The most important feature to me – right now – is ease of use. [...] I find the virtual access to the databases, articles, etc. very awkward and difficult to understand and use. I was looking forward to accessing the resource[s], but they are too clunky to work with. Perhaps with time I would get used to it, but it would be great if the usability could be improved.

Returning to the Google comparison, one student wrote, “It would be great to have a search engine like Google, where you can just put in keywords and have all articles returned.” In criticism of the UNC Libraries website, one student wrote, “If I find a resource or database I like, it’s sometimes tricky to get back to that same resource,” and another student wrote that he/she would like to see “a more user-friendly Web interface.” Like the students in previous studies in library literature, the distance education students surveyed have seen how easy conducting a search can be through Google and now would like, or even expect, all searching to be similarly low in the amount effort expended, but high in relevant results. As Kim wrote, libraries are in competition with Google and other competing search engines for student attention (2006). The survey results indicate that students are already far more likely to use Google on a day-to-day basis than the Library Web page. The student comments show that libraries have quite a bit of work to do in keeping the less frequent library use that they do enjoy.

The second open-ended question asked students to report what they felt the successes of UNC Libraries were. 7 of 16 students reported that they felt the biggest success of UNC Libraries was the quantity and/or the quality of electronic resources available. “I am very glad to have access to so many articles/journals/etc. electronically.” “Lots of e-journals.” “The quality and quantity of the electronic resources offered are amazing.” One student states her indebtedness to UNC Libraries as follows: “The online tutorial I took was very good, as was access to a wealth of scholarly articles online. I

couldn't have completed some projects without access to those resources.” Another student similarly states her dependence on library services: “A huge number of databases and collections available electronically while I'm sitting in Charlotte. That's a huge resource to have at my fingertips. Often, much better information than I would have access to without being enrolled in distance classes.” 4 additional students, while not mentioning electronic resources, named UNC Libraries' greatest success as having lots of information available. Although electronic resources were not specified, one can assume based on the students' reported use of web-based resources and the library Web page that the information to which they were referring is probably of an electronic variety.

Yet, one would be remiss if they tried to read these glowing reports of electronic access as indicative of distance education student satisfaction with the electronic services provided. An overwhelming 13 of 16 respondents indicated that they would like to see more enhanced electronic access from the library Web page, with 6 students specifying that they'd like access to more information electronically, and 12 students calling for a more user-friendly search interface and lamenting the confusion and difficulty that sometimes comes from using the library Web page. This contradicts the results of the immediately preceding question, in which 13 of 19 students claimed they rarely or never experienced difficulty using the UNC Library web page. The survey results indicate that most of the students surveyed here are experienced web and library users. 100% of those surveyed indicated that they use web resources at least weekly, and 14 students listed the library Web page as an important research tool, with 8 of those students indicating that they use this resource weekly. As experienced users, they have learned their way around a system that is, by their own testimony, cumbersome and confusing. As we can see

from the student responses, a system that gives experienced users little trouble is hardly a satisfactory system.

The respondents were asked to rate a series of statements regarding information services on a Likert-like scale of very important to not important, and were then asked to select the statement they felt was the single most important factor in selecting and information source. The largest consensus, 6 of 16 respondents, chose the phrase “I can get materials I want fast” as the most important, and 4 respondents, the second largest consensus, chose “It delivers a wide variety of materials to me quickly and efficiently.” These statement choices show that speed is a primary factor of importance to our users in choosing a source of information, reinforcing Liu and Yang’s 2004 study stating the same. One student in the open-ended questions recounted her experiences in watching a video on reserve through UNC Libraries:

I had to watch two videos placed on reserve by the instructor (for my on-campus class). The videos were relevant and contained interesting material; [but] if they are important enough to be required, they should be accessible 24 hours a day/7 days a week/365 days a year. [...] I drive two hours to get to campus, work full-time, am taking three UNC classes and I have a practicum also this semester. It is extremely hard to find even 30 minutes to go to the library to watch these videos (but I did!).

While this student’s determination in completing her assignments is certainly to be admired, one can understand her frustration in trying to complete this assignment. Realistically, most other students in this situation would have probably left the assignment uncompleted and would then have missed out on the relevant and interesting material that the assignment contained. Her story raises an interesting point in considering electronic access in that the class to which she is referring is not taught at a distance. It is worth noting that all of our students, not just those that may be classified as

“non-traditional learners” or those at a distance, lead very busy lives. This video reserves student is surely not the only student at campus who travels a long distance for class, and many students, including those who learn away from campus, are also managing families and careers along with their schooling. Enhancing electronic services in such a way as to cut the time necessary for research or class work is an undertaking that could improve the scholarly lives of not just distance students, but all those affiliated with the University.

It should not be surprising, in light of this realization regarding students’ personal lives, that most of the library’s services go largely unused by distance education students. Students were presented with a list of library services and were asked to estimate their use of such services as between never, monthly, weekly, or daily. The results of this question may be seen in Figure 4. As is shown in this figure, the majority of students indicated that they never used the library’s services, with the notable exception of those services relating directly to classes or research (library Web page, e-journals, e-reserves, and article databases). While the low use of library instruction or the physical library building may not be surprising, it is somewhat distressing that services that could be considered incredibly useful to someone learning at a distance, such as instant messaging with a librarian or borrowing books through interlibrary loan, were used by only 3 and 5 people out of 19, respectively. Also worth noting, checking out UNC books by mail, a service created especially for distance education students, was indicated as being never used by all 19 respondents.

Several students indicated in the open-ended questions that they were unaware of the services that are available to distance education students through UNC Libraries. One

student mentioned that she had never heard of RefWorks or EndNote. Several other students made comments that would lead the reader to believe they were unaware of the

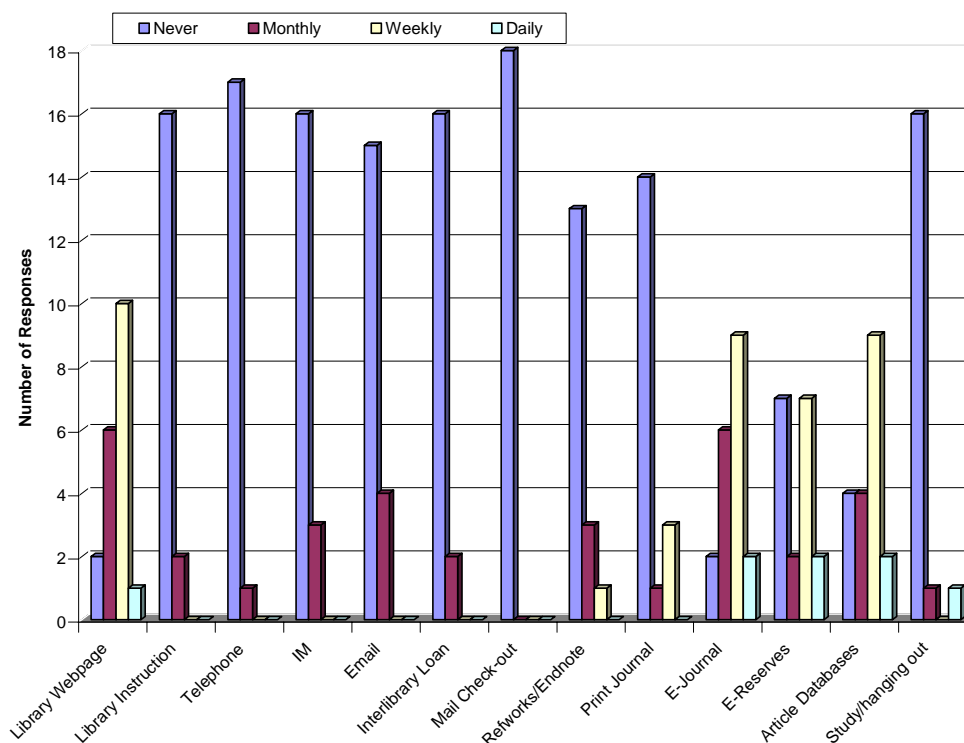


Figure 4: Distance Student Use of Library Services

possibility of interlibrary loan. One mentioned that when he finds an article that is not available through UNC electronically, he must either “pay for it or not use it.” Another, when talking about what she would do to improve access to information, wrote “Everything would be available or the library would get it if it were not.” One student, who indicated earlier in the survey that she did not have to complete research assignments for class, reported that she was unaware of the ability to use the library as a distance education student: “I didn’t know I could use the library, being a very part-time student and being a distance learning student. So perhaps it would be good to information students signing up through [my department] that we have access to the library” (sic).

These statements, coupled with the low use of library services, indicate that it may be beneficial to distance education students for the library to create a distance education-specific library portal, from which distance education students could get access to the information and services that are directly relevant to them and their situation.

When asked about the software used in their distance learning class, all of the 17 students involved in classes that met online-only reported that they used the Blackboard course management software in their classes. One of the features of this software is a “Library” link which, when clicked, takes the student directly to their home institution’s library webpage. When asked if they had used the Library link from Blackboard, 14 of the 17 respondents reported in the affirmative. While the default page used for the Library link is the UNC Libraries’ homepage, the library does have the capability to create pages based on the needs of a particular class or department. Therefore, it is the recommendation for this distance population, given the high use of Blackboard and the Library link among distance education students, that a distance education library page be created to be accessed directly from the Blackboard Library link. UNC Libraries currently provide this customization service to faculty and staff on an individual basis.

The creation of a customized portal for a large population of students would allow library staff to serve the needs of many people while expending relatively little staff resources. This portal should include those services that are used most often by distance education students, such as the article databases and e-reserves, as well as links to those services aimed at distance students but seldom used, such as instant messaging and information about borrowing UNC books through the mail. One possibility worth mentioning is an embedded instant messaging screen, which several chat services now make available, that

would allow distance students to chat with librarians directly from the distance education portal.

A general analysis of the demographic data collected allows the researcher to gain a clearer understanding of the distance education student. 70 percent of the students surveyed indicated that they have part-time status, with another 25 percent indicating that they are full-time students. 45 percent of those surveyed identified themselves as undergraduate students, and 50 percent self-identified as graduate students.

Approximately 95 percent of students indicated that they would identify with the term “distance education student,” with only one person indicating that they would not identify with this term. Over half of those surveyed (55 percent) reported that they were 35 years of age or older; 90 percent of those surveyed reported ages over 25. While this trend seems to echo the assumption that distance education students are often non-traditional students, it does shed light on the information seeking behavior indicated by the surveys. Over half of those surveyed reported ages that would put them well over the general cut-off for the Millennial generation, thought to be at about age 27 at the time of the survey. This age differential between the distance education students surveyed and those studied in previous surveys of information seeking behavior may account for some of the contradictions presented in this research. It is worth noting that the distance education students surveyed in this study represent a valid cross-section of the student population that is not typically described by the term Millennial, and does not engage in the same information seeking behavior as the Millennial generation. While many libraries are focusing their services on the needs of the Millennial generation, it is possible that this

growing subsection of the student population, distance education students, will slowly find that the library is focusing on needs that are not their own.

However, while their dates of birth may put them outside the cut-off for being a Millennial, in many ways the distance education population does engage in behavior attributed to the Millennial generation. As was shown in the list of important research tools, Google was identified as equally important to their research as the UNC Library Web page. And while equally important, Google was used with much higher frequency than the library Web pages or any other resource. Furthermore, when asked to state how confident they were that they were finding everything they should on their research topics, 16 of 19 students indicated that they were confident to very confident. This high level of confidence corresponds with the findings of the Brown *et al* study, which found that Millennial students were characterized as being highly confident in their search abilities. These results suggest that the behavior attributed to the Millennial generation is less due to a generational divide, and more of a result of living in the information age and the lack of proper instruction. Individuals adapt to technology at very different rates; it is reasonable to assume that those who engage with technology on a regular basis would be more likely to use technology frequently than those who do not. Similarly, those who Google often with good results are more likely to Google, and those who use the library with unsatisfactory results are less likely to return.

Conclusion

The survey responses provided by the distance education students clearly show that electronic resources are preferred over the more traditional print-based resources provided by the library. Distance education students are, for the most part, experienced users of web-based resources and the library Web page. As most of their classes meet solely online, it is not surprising that most distance education students would prefer to access information electronically.

While distance education students report few problems in using the library Web page, they are also quick to point out the difficulty that comes with using the Web page and the somewhat confusing search interface. When the majority of experienced users state that a system is difficult, it can be taken as a good indication that the system is in need of repair. Given the current state of competition over information retrieval services, there is no sense in asking students to learn a broken system. Though it may be somewhat unrealistic to force all information retrieval into a Google interface, steps should be taken to simplify the search process for the user.

Distance education students recognize the library Web page and Google as equally important to their research. This departure from the published literature indicates that scholarly research skills are being emphasized among this student population. However, Google is still clearly the favored search tool, with the majority of students indicating that it is used daily. While some of this may be due to a lack of information literacy, Google may also be more suited to meeting a homework-level day-to-day

information need than the library Web page. Student comments reinforce this hypothesis, stating that the library webpage is more awkward to use than the Google interface.

While most students say that the electronic access is UNC Libraries' greatest strength, almost all students also say that the service they would most like to see in the library is more enhanced electronic access. Speed is cited as the most important factor in selecting an information resource, and increasing library efficiency in this regard would be beneficial to all those affiliated with the university.

Most of the services provided by the library are not used by distance education students, and several students responded that they were unaware of the services provided by the library. To respond to the students' desire for a more streamlined Web page, and to promote those services aimed at distance students, this study recommends the creation of a distance education library Web portal, accessible through the Library link of Blackboard. By limiting this page to those resources that are most used by distance students, and those services most beneficial to distance students, the library may be better able to address the unique needs of the distance user.

Although some of this study's findings seem to contradict those previously published in the library literature, this may be due to the fact that the students studied here are not, strictly speaking, of the Millennial generation. Therefore, their dependence on the library Web page may be a product of their generational tendencies. However, though their age may prevent them from being labeled as members of the Millennial generation, they exhibit search behavior that could be characterized as Millennial.

Google is the preferred information tool for day-to-day searching, and they are highly confident in their search habits.

One major limitation of this study is, obviously, the low response rate. This could be combated in future studies of distance education students by keeping the survey open for a much longer period of time and sending multiple email reminders to the study population. The study could also be expanded to include other departments offering distance education classes to students in order to develop a more well-rounded picture of distance education at the university.

One area for further research, as mentioned previously, is the use of e-books among distance education students. One reason e-books were not used as frequently as other electronic resources may be that UNC had access to only a limited number of e-book titles. Now that the university has expanded its collection in terms of e-books and given these resources more prominent placement on the Web page, it may spur distance education students to begin using these resources with the same frequency as other electronic resources.

More research could also be done in examining the why of distance education student information seeking behavior. Now that it is known which information tools are used most frequently and identified as important, it would be interesting to learn what types of searches are being done with each tool. By completing this type of study, more could be learned about the types of research being done by distance education students and which tools are used for specific kinds of research.

Finally, more research is required into the information seeking behavior of the Millennial generation. While this study suggests that the behavior attributed to a

generation gap may be due to other underlying issues, a more rigorous study of Millennials is needed to determine the validity of this suggestion. It would be most beneficial to compare information seeking behavior of students considered to be of the Millennial generation with students that were older in order to isolate and compare differences between these groups.

Bibliography

- ACRL Standard and Guidelines, “Guidelines for Distance Learning Library Services,”
C&RL News 61 (11, 2000), pp.1023–1029.
- Ault, M. (2002). “Thinking Outside the Library: How to Develop, Implement and Promote Library Services for Distance Learners.” *Journal of Library Administration*, 37(1/2), 39-48.
- Baird, C. M., & Wilson, P. (2002). Distance Learning Librarian: Essential Team Member in Distance Learning Design. *Journal of Library Administration*, 37(1/2), 49–57.
- Barron, B. B. (2002, January). Distant and Distributed Learners are Two Sides of the Same Coin. *Computers in Libraries*, 22, 26.
- Brown, C., Murphy, T.J. and Nanny, M. (2003). Turning techno-savvy into info-savvy: authentically integrating information literacy into the college curriculum. *Journal of Academic Librarianship*, 29(6), 386-398.
- Casey, A. M.; Sochrin, S. & Race, S. F. (2002). Fair is Fair, or Is It? Library Services to Distance Learners. *Journal of Library Administration*, 37(1/2), 147–161.
- Cassner, M. & Adams, K. (1998). Instructional Support to a Rural Graduate Population: An Assessment of Library Services. In C. J. Jacob (Ed.), *The Fifth Off-Campus Library Services Conference Proceedings* (pp. 355-362). Mount Pleasant, MI: Central Michigan University.
- Cmor, D. & Lippold, K. (2001). *Surfing vs. searching: The Web as a research tool*. Paper presented at the 21st annual conference of the Society for Teaching and Learning in Higher Education, June 14-16, Newfoundland. Retrieved March 27, 2007, from <http://staff.library.mun.ca/~DCmor/stlthe>
- Cooke, N.A. (2004). The role of libraries in web-based distance education: An account and an analysis of the impact of web technology on distance learning– what remains unchanged, what is changing. *Journal of Library & Information Services in Distance Learning*, 1(4), 47-57.
- Feldheim, M. A., et. al. (2004). Faculty-Librarian Collaboration: Meeting the Information Technology Challenges of Distance Education. *Journal of Public Affairs Education*, 10(3), 233-46.

- Gandhi, S. (2003). Academic Librarians and Distance Education: Challenges and Opportunities. *Reference and User Services Quarterly*, 43(2), 138-154.
- Goodson, C. (2001). *Providing Library Services for Distance Learning Students*. New York: Neal-Schuman Publishers, Inc.
- Griffiths, J. R. & Brophy, P. (2005). Student searching behavior and the web: Use of academic resources and Google. *Library Trends*, 53(4), 539-554.
- Holliday, W. & Qin, L. (2004). Understanding the millennials: Updating our knowledge about students. *Reference Services Review*, 32(4), 356-366.
- Jaggen, K. E., Tallman, E. M. & Waddell, W. D. (1991). Library Services to Off-campus Sites: An Assessment Survey. In C. J. Jacob (Ed.), *The Fifth Off-Campus Library Services Conference Proceedings* (pp. 131-135). Mount Pleasant, MI: Central Michigan University.
- Jones, M. F. (2002). Help! I'm the New Distance Librarian—Where Do I begin? *Journal of Library Administration*, 37(3/4), 397-410.
- Journal of Proceedings of the General Faculty and Faculty Council*. (2006, September 15). Retrieved April 3, 2007, from <http://www.unc.edu/faculty/faccoun/minutes/2006-07/M06FC09.shtml>
- Kazmer, M. M. (2005). Community-embedded learning. *Library Quarterly*, 75(2), 190-212.
- Kelley, K. B. & Orr, G. J. (2003). Trends in distant student use of electronic resources: A survey. *College & Research Libraries*, 64(3), 176-191.
- Kim, J. (2006). Capturing metrics for undergraduate usage of subscription databases. *Online*, 30(3), 32-39.
- Litten, A. and Lindsay, B. (2001). *Teaching and learning from generation Y*. Retrieved March 27, 2007, from: www.wesleyan.edu/libr/nelig/2001/litten-lindsay/index.htm
- Liu, Z. and Yang, Z. Y. (2004). Factors Influencing Distance-Education Graduate Students' Use of Information Resources: A User Study. *The Journal of Academic Librarianship*, 30(1), 24-35.
- McLean, E. & Dew, S. H. (2004). Assessing the library needs and preferences of off-campus students: Surveying distance education students, from the Midwest to the West Indies. *Journal of Library Administration*, 41(1/2), 265-302.

- Maness, J. M. (2006). An evaluation of library instruction delivered to engineering students using streaming video. *Issues in Science and Technology Librarianship*, 47. Retrieved March 27, 2007, from: <http://www.istl.org/06-summer/refereed.html>
- Marchionini, G. (1992). Interfaces for end-user information seeking. *Journal of the American Society for Information Science*, 43(2), 156-163.
- Markgraf, J. S. (2002). Collaboration Between Distance Education Faculty and the Library: One Size Does Not Fit All. *Journal of Library Administration* 37(3/4), 451-464.
- Partridge, H. & Hallam, G. (2006). Educating the millennial generation for evidence based information practice. *Library Hi Tech*, 24(3), 400-419.
- Ren, W. (2000). Library instruction and college student self-efficacy in electronic information seeking. *Journal of Academic Librarianship*, 26(5), 323-328.
- Sacchanand, C. & Jaroenpuntaruk, V. (2006). Development of a web-based self-training package for information retrieval using the distance education approach. *The Electronic Library*, 24(4), 501-516.
- Shouse, D. L. (1995). Library Needs of Rural Distance Education Students. In C. J. Jacob (Ed.), *The Seventh Off-Campus Library Services Conference Proceedings* (pp. 355-362). Mount Pleasant, MI: Central Michigan University.
- Song, Y. (2005). A comparative study on information-seeking behaviors of domestic and international business students. *Research Strategies*, 20, 23-34.
- Stasch, M. (1994). *A Survey of Information Sources Used By Students Involved in Distance Education*. Unpublished master's thesis, San Jose State University.
- Transcript, Faculty Council Meeting*. (1996, November 15). Retrieved April 3, 2007, from <http://www.unc.edu/faculty/faccoun/archives/1996-97/96nov/file.3.html>
- Transcript of the Proceedings of the Faculty Council*. (1998, March 27). Retrieved April 3, 2007, from <http://www.unc.edu/faculty/faccoun/transcripts/T98FC03.html>
- Trowbridge, A. (2007, March 8). Some pan move to online classes. *The Daily Tar Heel*. Retrieved April 3, 2007, from http://media.www.dailytarheel.com/media/storage/paper885/news/2007/03/08/StateNational/Some-Pan.Move.To.Online.Classes-2764002.shtml#cp_article_tools
- Unwin, L., Stephens, K., & Bolton, N. (1998). *The Roll of the Library in Distance Learning: A Study of Postgraduate Students, Course-Providers and Librarians in the UK*. London: Bowker Saur.

Webb, P. (2006). Meeting the needs of distance education students. *College and Research Libraries News*, 67(9), 548-550.

Yang, Z. Y. (2005). Distance Education Librarians in the U.S. ARL Libraries and Library Services Provided to their Distance Users. *Journal of Academic Librarianship*, 31(2), 92-97.

Appendix A: Survey Instrument

By completing and submitting the following questionnaire you agree to participate in the research study and to the provisions of the attached letter.

Please indicate your current status:

- Part-time graduate student
- Full-time graduate student
- Part-time undergraduate student
- Full-time undergraduate student
- Other

Do you consider yourself a distance education student?

- Yes
- No

Please select your age range from among the choices below:

- 24 and under
- 25-34
- 35-44
- 45-54
- 55 and above

Please select your gender:

- Male
- Female

From where do you most frequently access the internet for class?

- Home
- Office
- Library
- Other:
- Do not need internet access for this class.

How far from a UNC-Chapel Hill Library do you live?

- 0-5 miles
- 6-10 miles
- 11-15 miles
- 16-20 miles
- 21-25 miles
- 26 or more miles

How far from your home is the library you use most frequently?

- Do not use library
- 0-2 miles
- 3-6 miles 7-10 miles
- 11 or more miles

How many online or distance education classes have you taken?

How does your distance class meet?

- In person, away from UNC campus
- Online only
- A mix of virtual and in person

Do your online classes require you to do research outside of class?

- Yes
- No

What kind of software or technologies does your distance class utilize, if any? (Check all that apply)

- Blackboard
- Course website
- Macromedia Breeze
- Instant Messenger or synchronous chat
- Unknown
- Other ____
- None

Have you ever used the University Library link from within Blackboard? (with image)

- Yes
- No

Approximately how many hours do you spend reading information for your online class in a week?

How do you typically get outside information needed for class? (Check all that apply)

- UNC Library (in person)
- Other academic libraries (in person)
- Public Library
- UNC Library website
- Other website (Please provide: _____)

How often do you use web-based resources for your class research?

- Daily
- Weekly
- Monthly
- Quarterly

Annually
Never

How often do you use the following types of resources in your research?

	Never	Annually	Quarterly	Monthly	Weekly	Daily
Books						
Journals						
Web pages						
Online databases						
Government information (e.g. Legislation, case law, reports, etc.)						
Statistical Information						
Newspapers						
e-books						

What are the most important individual tools (i.e., Library website, Google, Journal of Distance Education) that you use to search out information when researching? You may list up to five.

- 1.
- 2.
- 3.
- 4.
- 5.

How often do you use the tool you listed as #1?

Annually Quarterly Monthly Weekly Daily

How often do you use the tool you listed as #2?

Annually Quarterly Monthly Weekly Daily

How often do you use the tool you listed as #3?

Annually Quarterly Monthly Weekly Daily

How often do you use the tool you listed as #4?

Annually Quarterly Monthly Weekly Daily

How often do you use the tool you listed as #5?

Annually Quarterly Monthly Weekly Daily

Please indicate the degree of importance of each of the following statements in choosing an information resource.

Not important Somewhat important Important Very important

It is close to my home or work.

Its business hours are convenient to me.

I can get the materials I want fast.

I can get on-site reference help.

I can evaluate the relevance of materials I seek before committing to them.

The service staff are very nice and helpful.

The service staff provide accurate and reliable information.
 It has a large collection of electronic materials.
 It has a large collection of print materials.
 It delivers a wide variety of materials to me quickly and efficiently.
 It is easy to use.
 I can have easy access to the resource from home.
 I can use the resource to solve a variety of problems.
 I learn something new each time I use this resource.
 I can use the resource with my current research skill set.

Which of these statements is the single most important factor in selecting an information resource?

[select from drop-down list.]

In a typical semester, how many times do you use each of the services listed below?

Never Annually Quarterly Monthly Weekly Daily

UNC Library Webpage

Library Instruction

Calling the library

Instant messaging with a librarian

Emailing a librarian or the library

Borrowing books from other libraries through UNC

Having UNC books mailed to me

Online library tutorials

Refworks/Endnote

Print Journal

Electronic Journal

Electronic reserves

Electronic Article Databases

Studying/hanging out in any of the UNC libraries

Have you used the library in any other way not mentioned here?

Yes No

If yes, please describe in the box below:

How confident are you that you are finding everything you should on your research topic?

1 2 3 4 5
 1= Not very confident 5=Very confident

Do you use bibliographic database software (such as EndNote or RefWorks)?

Yes No

If yes, which software do you use?

Bibtex

EndNote

ProCite

Reference Manager
 RefWorks
 Zotero
 Other _____

From which search screen would you rather begin your search process?

Google search page
 UNC Libraries home page

How many times did you visit UNC Libraries in person in the last 12 months?

0 1 2 3 4 5 More than 5 times

How many times did you visit UNC Libraries virtually in the last 12 months?

0 1 2 3 4 5 More than 5 times

How often do you experience difficulty using the UNC Library website?

Very Often
 Often
 Sometimes
 Rarely
 Never
 Do not use

In your opinion, what are the shortcomings of UNC Libraries, and what new or different services would you like to see provided?

In your opinion, what are the successes of UNC Libraries?

Imagine that you could have information made available to you in any form you desired. What one thing would you change to improve your access to, or use of, scholarly information?

(Participants are shown the following screen upon completion:)

We thank you for your time spent taking this survey.

Your data has been recorded.

Appendix B: Letter of Implied Consent

Information Seeking Behavior of Distance Education Students

March 27, 2007

Dear Student:

I am a graduate student in the School of Information and Library Sciences, and I am conducting a research study to determine how the UNC libraries can better meet your needs as a distance education student. The study aims to understand the library needs of students who are enrolled in distance education classes at UNC. More specifically, it attempts to determine what students' unmet needs are, and how the distance education students may be better served by UNC Libraries.

Your email address was provided by your department as a possible participant in this study. A total of 300 students have been chosen to participate in this study. Your participation in this study is completely voluntary.

To participate in the study you would complete the electronic questionnaire that is linked to this email. Completing the questionnaire connotes your consent to be a participant in this study. This questionnaire is composed of questions addressing your use of UNC Library services, questions about the way in which you find information, and some questions (demographic) used to describe the respondents and programs in this study. Completion of the questionnaire should take no longer than 20 minutes. You are free to answer or not answer any particular question and have no obligation to complete answering the questions once you begin.

Your participation is confidential. You are asked not to put any identifying information on the questionnaire. All data obtained in this study will be reported as group data. No individual can be or will be identified. Although I, as the Principal Investigator, am not employed by the UNC libraries, I plan on sharing the results of this research with some library staff members as well as making the results available on online research paper archives. The only person who will have access to the data is myself, as the Principal Investigator.

There are neither risks anticipated should you participate in this study nor any anticipated benefits from being involved with it. However, there will be educational or professional benefit from this study, as the information we obtain may be communicated to the library staff through publication in the literature, presentation at professional meetings and direct dissemination to the professional associations. There is no cost to you or financial benefit for your participation.

You may contact me with any questions by email (athomps@email.unc.edu). Additionally, if you are interested in viewing the results of this study or the resulting master's paper that will come from this research, please email me and I will send you this

information by July, 2007. I will not share your email address or use your email for any reason other than to send you the completed questionnaire data and report this summer.

All research on human volunteers is reviewed by a committee that works to protect your rights and welfare. If you have questions or concerns about your rights as a research subject you may contact, anonymously if you wish, the Institutional Review Board at 919-966-3113 or by email to IRB_subjects@unc.edu. If you contact the IRB, please refer to study #07-0340.

Thank you for considering participation in this study. I hope that we can share your views to improve the services and resources that the libraries make available to UNC staff, students, and faculty.

Sincerely,

Amy Thompson
School of Information and Library Science
MSLS candidate, May '07

Link to survey:

http://uncodum.qualtrics.com/SE?SID=SV_eFnQVKkduRQIyPO&SVID=Prod