This study examines the services and equipment that are provided by the University of North Carolina at Chapel Hill libraries for their physically disabled patrons. A survey of students who are self-identified as being physically disabled was conducted to evaluate their satisfaction with the services and equipment provided to them by the University’s libraries. The study revealed that there is a wide range of levels of satisfaction among the subjects with regard to the services that are provided by the library. It was also determined that none of the subjects used the equipment provided by the UNC libraries for physically disabled patrons and the majority of subjects are able to use the libraries’ website and electronic resources with little assistance.

**Headings:**

- College and University Libraries – Services to the handicapped
- Computers and the Handicapped
- Americans with Disabilities Act
- Handicapped, Library Services for
- Handicapped, Library Services for – Blind and Partially Sighted
A STUDY OF THE SERVICES AND EQUIPMENT PROVIDED TO PHYSICALLY DISABLED PATRONS AT THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL LIBRARIES

by
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A Master’s paper submitted to the faculty of the School of Information and Library Science of the University of North Carolina at Chapel Hill in partial fulfillment of the requirements for the degree of Master of Science in Library Science.

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Approved by

_______________________________________
Diane Kelly
Introduction

As a person with a connective tissue disorder that was only recently diagnosed, I am unaccustomed to needing any type of assistive technology. However, as the joints in my hands have deteriorated, it has become painful and difficult to use a standard keyboard and mouse. On my personal computer, I have voice-transcription software which allows me to dictate what I would normally type and to navigate websites. Several months ago, I was using the online catalog at one of the computer terminals at Davis Library (the main library of the UNC-Chapel Hill Academic Affairs Library system) and I was wishing that I had that voice transcription software available to use on this public computer. Suddenly, I realized that there may, in fact, be just such software available in the library, but I was unaware of it. I began to reflect on the idea that prior to developing my condition, I had never thought about what a physically disabled patron of a library encounters when trying to access the library’s resources. This led me to wonder what types of services and equipment existed at the library and if they were adequate to meet the needs of the physically disabled population at the University of North Carolina at Chapel Hill.

There are approximately 50 million U.S. citizens who have some kind of “functional limitation or disability”. (Bowen 48) This means that potentially twenty percent of the potential clientele of a library have a disability. In addition, seven and three quarter million people in the United States cannot use a computer without some
type of assistive technology. (Bowen 48) These statistics demonstrate the need for equipment and services for disabled clients in all libraries. It can be inferred that with such a large number of people in the U.S., there are growing numbers of students with disabilities enrolling in colleges and universities and, therefore, using academic libraries. (Dequin 28) At the University of North Carolina at Chapel Hill, there are approximately 150 students who are self-identified as having a physical disability. This does not include students who are self-identified as having a learning disability or attention deficit/hyperactivity disorder. Approximately 1/3 of the 150 disabled students are enrolled in graduate/professional programs and the remaining 100 are undergraduate students. It should be noted, however, that there can be overlap among enhancements that are made for physically disabled patrons that also aid patrons with learning and cognitive disabilities.

Based on the literature, it is reasonable to assume that students with physical disabilities do not want to be singled out as this may lead to awkwardness or embarrassment. However, they also want to have access to all of the resources and services that an able-bodied student has access to. By making modifications for these students in a library, whether they are small adjustments, such as placing Braille letters on the labels of soda and snack vending machines or large improvements, such as redesigning a website to make it completely accessible to a variety of users, the library becomes a more comfortable, useable place for the entire community that it serves.

In this digital age, when there is a push in libraries to create electronic access to large portions of their collection, it is important to provide services and accessibility to all user groups. Based on the Americans with Disabilities Act of 1990, libraries (under the
category of public accommodations) are required to make reasonable accommodations for users with disabilities. However, in order for libraries to provide adequate services for patrons with disabilities, it may be necessary to go beyond what the ADA requires. Simply retrofitting a building to comply with the ADA guidelines may not be enough to provide a physical space that is inviting and comfortable for patrons with disabilities. In addition, it is important to provide access to electronic resources for users with physical disabilities.

When the Americans with Disabilities Act was established in 1990, it was met with hesitancy and resistance from the library community. Some librarians believed that the service they were currently providing was sufficient while others hoped that libraries would not be required to maintain the standards set by the ADA. (Gunde 806) It is clear now, fifteen years after the law went into effect, that libraries were indeed affected by the law and were responsible for complying with the standards that it set. Even without these regulations, librarians should be accommodating their disabled patrons based on the ethics of the library profession. The first item in the American Library Association’s Code of Ethics is: “We provide the highest level of service to all library users through appropriate and usefully organized resources; equitable service policies; equitable access; and accurate, unbiased, and courteous responses to all requests.” Equitable service to all users includes those with disabilities.

The purpose of this study is to examine the current level of service for physically disabled patrons that is provided by the Academic Affairs Libraries at the University of North Carolina at Chapel Hill. The Academic Affairs Libraries “consist of the Walter Royal Davis Library, the main library that principally serves the humanities and social
sciences; the Robert B. House Undergraduate Library that includes the major reserve reading materials and the Media Resources Center; the Louis Round Wilson Library, a special collections facility that includes the Manuscripts, Maps, and Rare Book collections, the North Carolina Collection and gallery; and nearly a dozen branch libraries covering art, biology, chemistry, geological sciences, information and library science, math/physics, marine sciences, music, and city and regional planning.”

(www.lib.unc.edu) These libraries serve the faculty, graduate and undergraduate students and staff of UNC-Chapel Hill. In addition, because this is a public university, any resident of North Carolina has the option to obtain a borrowers’ card and utilize the libraries’ resources. The research question that is being studied is: what is the level of service that is currently being provided for physically disabled students in the academic libraries at the UNC-Chapel Hill libraries and does this meet the needs of the users? By evaluating the level of service that is currently offered at the Academic Affairs libraries, it will be possible to make recommendations and suggestions for what other valuable services and resources should exist that the users would like.

For the purpose of this study, a physical disability is defined as a substantial physical impairment that is evident in more than one setting. Physical impairments can include issues with vision, hearing, speech, mobility or agility. A person must be either self-identified as having a disability or be obviously impaired, such as being confined to a wheelchair or on crutches to be considered disabled in this study. Assistive technology is considered to be any hardware or software that enhances computer programs for the physically impaired. Enhancements for using the computer include alternative keyboard
and mouse devices, replacing beeps with light signals for the deaf, screen magnifiers and text enlargers and systems that form tactile Braille letters from on-screen text.

**Literature Review**

The literature that discusses serving disabled populations in libraries is mainly focused on providing quality service in public libraries. However, recently, there have been several studies done which examine the increasing number of disabled students in colleges and universities and the necessary adjustments that must be made to offer equivalent service to them. The literature typically does not distinguish between physical or mental disabilities. Learning disabilities, vision, speech and hearing impairments, and mobility issues are all classified as potential barriers for patrons attempting to use the library. (Miller-Gatenby 314) Miller-Gatenby and Chittenden (314-315) also note out that these impairments may only be a characteristic of a person until they interact with a specific physical environment that will cause a handicap situation. For example, it is the combination of a set of stairs and a student in a wheelchair that produces a handicap state of affairs. There are three main areas of library operations that need to take into account the current conditions for disabled patrons. These areas are: the physical space, service to patrons, and web accessibility.

*Physical Space*

The ADA guidelines state explicit specifications for library buildings to accommodate disabled patrons. These stipulations extend to the check-out areas, the stacks, card catalogs and magazine displays and reading and study areas. The physical space needs to be accessible to patrons in wheelchairs; therefore, there needs to be
enough space in the stacks for a person in a wheelchair or on crutches to be able to comfortably maneuver themselves. The aisles between book stacks should be at least 60 inches (Miller-Gatenby 319). In addition, the shelves should be no higher than 58 inches in height and no lower than 16 inches, to allow for patrons seated in wheelchairs to comfortably reach the bookshelves. (Miller-Gatenby 319) As this height restriction may pose a problem for some libraries that were built prior to the origination of the ADA regulations, it is important to have staff members who are available to assist patrons when the books are out of their reach.

Another important element of libraries is signage. According to Miller-Gatenby and Chittenden, “key issues to consider when designing signs are content, readability and placement.” (316) In order to make signs readable to a wide range of people, the wording should be clear and easy to read and when possible, symbols should be used. In addition, signs with raised letters and Braille characters are useful for patrons with visual impairments. If information cannot be reduced to an appropriate size for a sign, other options such as pamphlets and guides to the library can be made available in large print, Braille or on audio cassette or CD. (Miller-Gatenby and Chittenden 317)

Service to Patrons

The issue of having staff members who are willing, comfortable, and trained to help disabled patrons is another major theme in the literature. A study by Dequin, Schilling and Huang in 1988 examined the attitudes of academic librarians towards disabled patrons. They found that over 50 percent of the surveyed librarians held slightly positive attitudes towards disabled patrons. More specifically, they found that younger librarians (20-29 age group), female librarians and librarians who had contact with
disabled patrons had “more favorable attitudes.” (Dequin, Schilling and Huang 31) One can infer from this conclusion that merely interacting with disabled patrons can increase a person’s comfort level and attitudes for future interactions of a similar nature.

The social model of approach to disabled people “challenges people to give up the idea of disability…as a medical problem and to accept that it is a problem of exclusion from ordinary life.” (Playforth 47) By accepting that the hurdle for the disabled patron is not the disability itself, rather the exclusion that they face, librarians can begin to provide services that are inclusive to everyone. Playforth looked at deaf patrons, in particular, but her findings can apply to many disabilities. Her ideal library and information service included aspects such as staff trained in deaf awareness, announcements with visual as well as audio indications, advertisement of available services to Deaf clubs, lip reading classes, etc. (Playforth 56) In 1996, Mike Heery discussed the available academic library services for a variety of non-traditional students, including disabled patrons. He draws attention to the fact that even the symbol that is typically used to signify a disability, the wheelchair, is misleading, as only 7% of the disabled population use wheelchairs. (3) Heery determines that it is essential for a library to have a specific contact person on staff for disabled patrons to deal with. It is imperative that this person is present in the library, as this will be the primary person that disabled persons will seek out for help or advice. (8) Heery also notes the importance of providing training and awareness for staff. (10)

Vincent Tinerella and Marcia Dick focused their research on academic reference service for the visually impaired and created a guide for the non-specialist. (29) Using the Northern Illinois library as their place of study, Tinerella and Dick surveyed visually impaired students and constructed a list of recommendations for librarians. These
recommendations included advice such as: “act naturally, it is important not to overcompensate”, “be very specific when giving directions”, “never pet or disturb a guide dog”, and “offer to do small tasks not ordinarily considered for a sighted student – retrieve a book, make a photocopy, or print a journal article.” (31-32) These suggestions can apply to cases other than solely visually impaired user interactions (apart from the guide dog suggestion). Just as with able-bodied students, some physically disabled patrons require more time, effort and patience than others and training staff to recognize this is an important step in creating a more comfortable environment for users with disabilities.

In a study performed at the Northern Illinois University, twenty disabled students were interviewed to determine which library services were the most useful to them and how the program should be changed. (Jones, 479) The large majority (85%) of students interviewed felt that a librarian to help with their research was the most useful aspect of library service. (Jones, 480) The availability of private study rooms and particular equipment available in those rooms was the next most useful aspect of library services. (Jones 480)

This overall concept that the service provided to disabled patrons in libraries is a vital aspect of my research question. Is the service that is currently being provided by the librarians at the UNC-Chapel Hill libraries adequate? The literature suggests many ways to improve services and methods to train staff. By using a combination of these theories as the ideal model of what academic library service for disabled patrons should be, one can compare the services at a specific library, in this case, UNC-Chapel Hill, to the model. Collecting the data for this research is only one step towards creating a
comfortable, accessible environment for physically disabled patrons. The bulk of the solution will come from staff and administrators supporting the ideas of accessibility and implementing them.

Many academic libraries offer bibliographic instruction classes and it is important to remember that teaching methods should be inclusive of the needs of all types of students. Mary Beth Applin (140) found that it can “complicate a librarian’s ability to provide adequate accommodations” because students are not required to disclose their disability. In order to meet the needs of these users, instructors should employ multi-sensory teaching (Applin 141), whereby the information is conveyed in a variety of ways, visually, aurally and through hands-on experience. By presenting the information in this manner, students will be able to receive the message, no matter their learning style. The UNC-Chapel Hill Undergraduate Library reference/instruction librarians conduct hundreds of bibliographic instruction classes each semester for undergraduate students, primarily freshmen and sophomores. Their methods of instruction will also be examined in the survey that will be administered in this study to see if they are employing similar tactics to those that Applin recommends.

*Web Accessibility*

The last major barrier for libraries to overcome in making a completely inclusive environment for physically handicapped patrons is the accessibility of their websites. A study in 2000 by Lilly and Van Fleet found that only 40 of the 100 colleges on the Yahoo! List of “Most Wired Colleges” were deemed accessible by using the web accessibility analysis tool, Bobby (bobby.watchfire.com/). (5) The conclusion was that there was no consistency among what types of universities and colleges provided
accessible websites. A small, private college was just as likely or unlikely to have an accessibly page as a large, public university. As this study was conducted more than five years ago, it is impossible to draw the same conclusion today without duplicating the experiment; however, it is interesting to note that the researchers discovered that accessibility is the “result of personal and individual commitment to equitable access.” (Lilly 20)

The University of Colorado at Boulder campus has developed a committee called the Assistive Technology Advisory Committee which gathers information from disabled students and staff to plan changes on campus. (Kramer 32) One of their findings was that a live demonstration of assistive technology, such as JAWS, “seems to have a revelatory effect on web designers. Once aware of the problem, they are usually highly motivated to make pages fully accessible.” (Kramer 32) This indicates that awareness is a key component in creating a fully accessible library. Employees of an academic library may not be aware that there is a need for changes in order to accommodate physically disabled patrons. Once they become conscious of the issue, they will be proactive about making changes.

At the Montclair (N.J.) Public Library, it was discovered that as many as 9,000 of the 37,000 residents of the community may be struggling with a physical disability. (Hutchinson 76) After several months of investigation and planning, the library decided to implement a comprehensive program to make the building and collections completely accessible. The overall cost of the improvements was more than 10% of their annual operating budget, but the administrators and staff were committed to these improvements and found avenues for funding. (Hutchinson 77) This example demonstrates how
important it is that the members of the library staff support the changes once a needs assessment takes place.

Many articles have been written that discuss ways to make a website more accessible for physically disabled students. Many of the tips are simply good practice and make a site usable for a variety of people, not just physically disabled patrons. A preliminary evaluation of the accessibility of the UNC-Chapel Hill Academic Affairs Libraries website can be made by determining if it meets the criteria on the following list (Hudson 20-21):

- A text equivalent for all non-text elements (ex: alt tag for images)
- Equivalent alternatives for all multimedia presentations
- Web pages should be designed so that any information that is conveyed with color is also available without color (ex: required fields)
- Documents should be readable without an associated style sheet
- Row and Column headers should be identified for data tables
- Do not use frames
- Pages should avoid flickering images
- A text-only page should be provided when there is no other way to make your webpage accessible

All of this literature shows that there is a need for libraries to inspect their policies and procedures for disabled patrons. In some cases, ignorance of the issues could lead to inequitable access for disabled patrons. In other instances, it could be that the staff feels uncomfortable or uncertain about how to deal with disabled patrons. Awareness of the problems and barriers that physically disabled patrons face on a daily basis can go a long way in motivating people to create a hospitable environment for everyone. Gathering information from the disabled patrons about their satisfaction with the UNC-Chapel Hill Academic Affairs Libraries equipment and services is only one half of this research
study. Conveying this information to administrators and the staff of the library system is just as important as discovering what the issues are.

**Importance of Study**

This is an important topic to study for several reasons. First, according to the Americans with Disabilities Act of 1990, by law, libraries are required to make reasonable accommodations to provide equal access for disabled patrons to collections and resources provided by the library. Second, disabled people make up twenty percent of the population and increasing numbers of students with disabilities are attending colleges and universities, both in-person and through distance education. It can be difficult for an able-bodied person to examine the current practices of a library and determine if they are adequate for the needs of the disabled population. Therefore, by conducting a study where disabled patrons have a direct say in the sufficiency of existing services and equipment provided by the library and allowing for suggestions for the future, the library can better serve its user groups.

The internet has allowed people to gain access to information that they may never have otherwise found. A person with a mobility disorder who may previously been unable to attend a traditional university can now enroll in online classes and sometimes even complete an entire degree through distance learning. The library’s webpage and electronic resources need to be accessible to all students, including those with physical disabilities. While there are tools to help determine the accessibility of a website, such as the Bobby Accessibility Checker (http://bobby.watchfire.com/bobby/) or WAVE (http://www.wave.webaim.org:8081/wave/index.jsp), nothing can compare to the
judgment of a human being. Therefore, by surveying disabled students at UNC about both the physical aspects of the library, the services it provides and the accessibility of its website and electronic resources, a complete overview of what is available and what is lacking will exist. By making administrators, librarians and the staff of the library aware of the requests of the disabled patrons, changes could potentially be implemented to accommodate those students. Also, by simply making the library staff aware that this segment of the student population exists, they may become more cognizant of issues or problems that could arise in the future.

**Methodology**

This is a descriptive study which looks at the current level of service to disabled patrons at two UNC-Chapel Hill libraries. The sample was comprised of individuals who are currently enrolled students of UNC-Chapel Hill who are self-identified as having a disability. The self-identification process is initiated by the student through the Office of Disability Services at UNC (http://disabilityservices.unc.edu/). Self-identification allows students to make use of equipment and services provided by the Office of Disability Services in order to enable the students to “meet the demands of University life.” There is no requirement that a disabled student must register with the Office of Disability Services; therefore, it is possible that there are some students with disabilities who are currently enrolled at UNC-Chapel Hill who were not a part of the study population. There are currently approximately 150 students who are self-identified as having a disability. These 150 students comprised the study population.

Participants in the study were recruited via two email solicitations. Both email messages were sent out to all students who are self-identified as disabled. To ensure their
confidentiality, these emails were sent by Jim Kessler, the Director of Disability Services. The email stated the researcher’s name, her affiliation (School of Information and Library Science) at UNC-CH and asked for participants to complete an electronic version of a questionnaire regarding their usage of the UNC-Chapel Hill libraries. Two weeks after the first email solicitation was sent, a second, follow-up email (Appendix B) asking for recipients who had not yet participated to complete the survey.

The survey was administered electronically. Participants were given the option of completing the survey on paper or having the researcher administer the survey in person, if completing the survey online was not comfortable or convenient; however, none of the participants chose to complete the survey in one of these alternative methods. Dispensing the questionnaire electronically appeared to be the most feasible way of surveying the participants, as it allows users with vision, mobility or agility issues to use the customization of their individual computer to complete the questionnaire. Each student at UNC-Chapel Hill is required to purchase a laptop computer upon matriculation; therefore, all students should have access to email and the internet. The survey was created using a program called SurveyMonkey (www.surveymonkey.com), which enabled the researcher to design the survey as well as collect and analyze the data using the software.

The questionnaire (Appendix C) contained a combination of closed and open-ended questions. These questions resulted in a mixture of quantitative and qualitative data. The closed questions established the sex of the participant, an age range and level of academic study, the amount of time spent using the library and the library’s resources, which of the academic affairs libraries he/she frequents, and a section to determine what
services and equipment the participant currently uses and how satisfied he/she is with said services and equipment. In addition, there were sections asking the participant to rate the accessibility of the libraries’ websites and electronic resources. The open-ended questions asked the participants to expand on their answers to the closed questions, if they wished.

One advantage of administering the survey electronically is that it was faster and more economical than trying to distribute paper copies. In addition, it allowed for the preservation of the anonymity of the participants by allowing an intermediary to distribute the invitation to complete the survey via electronic mail. Also, because the participants have different types of disabilities, this enabled them to use any assistive technology that they have available. For example, if the text needs to be enlarged for a person who has low vision, his/her computer will automatically convert the font to a larger size, whereas a paper copy may be more difficult to read.

Another advantage to administering the survey as a self-administered questionnaire as opposed to a face-to-face interview is that it allowed for the participant to answer the questions without any barriers. For example, if the participant has any speech or hearing impairments, it might be difficult to communicate with the interviewer. However, with an electronic survey they could use a keyboard or voice-transcription software to convey their responses. Also, the participant may have answered more truthfully because the interaction is completely anonymous. The research shows that most people with disabilities do not want to be singled out, so asking a person with a disability to participate in a face-to-face interview regarding the library’s services for patrons with disabilities may make him/her uncomfortable or embarrassed.
One disadvantage to administering a survey online as opposed to a face-to-face interview was that the results were not as in-depth as an interview may have been. In an interview, the interviewer can follow up on specific comments made by the participant to elicit further information or understand any unclear pieces of information. Another disadvantage to this method is that the survey questions may not have high validity. It is hoped that by designing a questionnaire based on other empirical research studies and by extensively pre-testing the survey, the researcher was able to avoid any threats to the validity of the survey. The reliability of the study should be acceptable because the same set of questions was administered to all participants and presumably a participant would give the same answers to the questions if it was administered at two different times.

No physical harm was done to the participants and no deceit took place. The researcher was forthright about the purpose of the study both in the call to participate and on the survey itself. In addition, the participants were given the option of discontinuing participation in the study at any point. The anonymity of the participants was insured by creating an online survey that did not require any identifying information from the participant and the request for participation came from an employee of the Office for Disability Services; therefore the researcher never had access to the participants’ names or email addresses. The software used by SurveyMonkey did not save any identifying information from the participants, therefore it is impossible for anyone to connect the results with a particular member of the study population.

Results and Discussion

Out of 150 self-identified students, approximately 5% (8) completed the survey. This is a much smaller response than what was hoped for by the researcher. Because of
the small sample size, results should be considered preliminary, at best. There is no way to know why so few people chose to complete the survey, but it is speculated by the researcher that the invitation to participate came at a busy time in the semester and perhaps students had a great deal or work to do and did not want to take the time to complete the questionnaire. In addition, email messages about various studies are sent out to the university community on a daily basis, therefore, it is possible that the students who received the recruitment request viewed it as another piece of irrelevant email in their inbox. Also, the questionnaire was fairly time consuming, requiring that participants spend approximately twenty minutes completing the survey and some people may have felt that this was not worth it, especially because there was no enticement to complete the survey.

*General and Demographic Information*

Seventy-five percent (6) of the respondents were female and 25% (2) were male. Half (4) of the respondents were undergraduate students and half (4) were graduate students at UNC. Sixty-two and a half percent (5) of the respondents were between the ages of 17 and 25; 25% (2) of the respondents were between the ages of 26 and 36; and 12.5% (1) of the respondents were between the ages of 36 and 45.

Looking at the library habits of the respondents, 37.5% (3) use the UNC library system in some capacity between 0 and 3 hours each week; 37.5% (3) use the UNC library system between 4 and 7 hours each week and 12.5% (1) use the UNC library system between 8 and 11 hours. When asked which UNC libraries the respondents had visited in the past year, Davis Library and the House Undergraduate Library were the most popular choices, with 62.5% (5) of respondents having visited both libraries in the
past year. Figure 1 shows the distribution of the remaining libraries that were visited in
the last year. Seven libraries in the UNC system were not visited at all in the past year by
the respondents. These seven libraries were: Botany, Zoology, Math/Physics, Art,
Chemistry, School of Government, and Journalism and Mass Communications.

![Bar chart showing library visitation distribution](image)

Fig. 1 Distribution of libraries visited by participants in the past year.

The results of this question are not surprising, particularly that Davis Library and the
House Undergraduate Library were both chosen by the largest percentage of respondents.
Both of these libraries contain collections on a wide variety of subjects and are intended
for a large audience. Most of the smaller libraries have very focused, subject-specific
collections and do not have as many patrons as Davis or the Undergraduate Library.
Therefore, this distribution is what was expected.
When asked if the respondents had visited any libraries other than the UNC libraries in the past year, 37.5% (3) confirmed that they had and 62.5% (5) had not visited any other libraries. The three libraries that were mentioned by those who had visited another library were: Chapel Hill Public Library, Curham County Public Library and the Duke University Libraries.

Library Services

The next section of the survey covered library services for physically disabled patrons. Respondents were asked to rate the quality of a variety of library services and then to explain why they had given that rating. The choices for each response were: Excellent, Good, Average, Fair, Poor, or Never Used. When asked about the reference services provided by the libraries, 12.5% (1) considered the service to be excellent, 62.5% (5) considered it to be good and 25% (2) had never used the reference services. Respondents were informed that “reference services involve services such as a librarian assisting you in locating a book, performing research, instructing you on how to use the library's resources, etc. These services can be performed in person or virtually, via Instant Messenger, email or telephone.” The responses to the follow up question included comments such as “have always been more than willing to help when I needed it” and “I’ve been pleased with the services provided by the library.” One respondent found that access in Davis and the Undergraduate Library, mobility wise, was good; however the subject found Wilson Library “a little harder to navigate. The first time I tired [sic] to get into Wilson Library, however, I ended up walking up the stairs in order to ask how to get into it via handicapped access.”
Circulation services received mostly positive responses, with 25% (2) of the subjects rating the service as excellent and 37.5% (3) as good. Twelve and a half percent (1) of the respondents thought that the circulation services were average and 25% (2) had never used the circulation services. Comments about circulation services noted that respondents had not had any problems with the services and one respondent stated that “the internet helps a lot.”

Interlibrary loan services had not been used by the majority of respondent (87.5%; 7); however, one respondent rated the service as good and stated that he/she had assistance with the process. Interlibrary loan services were described as the services that were used to locate and obtain materials from outside the UNC library system.

Most of the subjects (87.5%; 7) had not been involved in library instruction sessions and therefore did not rate the quality of library instruction. However, 12.5% (1) of respondents rated library instruction as excellent. One subject noted that she did not have any problems with library instruction when she was involved with it, but she was not disabled when she had those classes.

A majority of respondents (62.5%; 5) felt that the library adequately promotes its services and equipment that are available for physically disabled patrons. However, the comments that followed this question indicate that the library could do a better job in advertising the services it provides:

- “I have had to find out on my own.”
- “But only with assistance”
- “Where is it posted? Can people who need to dictate bump people in the study rooms?”
- “Only by searching the website have I found what services they offer.”
Based on these responses, I contacted the person who is responsible for disability services and equipment at the Academic Affairs Libraries and asked her about the services that are offered at the libraries. Her response was that the library’s website outlines what is available. From the responses to the survey, it appears that more promotion and/or advertisement of the available services and equipment need to take place.

The next set of questions asked the subjects to rate their satisfaction on a variety of aspects of the library. The choices were: Extremely Satisfied, Very Satisfied, Satisfied, Somewhat Satisfied, Not at All Satisfied and Not Applicable. Each of the responses, except for Not Applicable, were assigned a number value, between 1 and 5, respectively. Ease of navigating the library was given an average rating of 2.63, with 38% of respondents choosing Very Satisfied. (See Figure 2 for a breakdown of all the ratings for this section)

Fifty percent (4) of the respondents were satisfied with the visibility of signs and directional information. This question had an average rating of 2.75. The rating for the comfort of chairs and tables in the libraries was evenly split, with 25% (2) choosing each Extremely Satisfied, Very Satisfied, Satisfied and N/A. The average rating for the comfort of chairs and tables was 2.00. The average rating for the ease of moving between shelves was 2.63, with 38% (3) of respondents very satisfied. Interestingly, 25% (2) of the subjects were very satisfied with the ease of use of the photocopiers in the library, 25% (2) were not at all satisfied with the ease of use of the photocopiers, and 25% (2) had never used the photocopiers. The average rating for the ease of use of the photocopiers was 3.00. Ease of use of printers was the lowest rated of this matrix of questions, with an average rating of 3.71, and 38% (3) of subjects being not at all
satisfied. None of the respondents chose to elaborate on their dissatisfaction of the usage of printers and it is impossible to ascertain the reasons for the low ratings. All of the libraries use a software called “Pharos” to manage the printing of patrons in the libraries. It could be that the subjects find the software difficult to navigate, or it could be that the placement of printers in the library (they are typically placed on tables or countertops) are inconvenient for students with mobility disabilities, or it could be other, unexplored reasons.

Thirty-eight percent (3) of the subjects were satisfied with the comfort of computer work stations; however, the responses ranged from extremely satisfied to not at all satisfied. Therefore, perhaps it is necessary to create more options for the seating and configuration of the computer work stations to accommodate the needs of everyone. The average rating for the comfort of computer work stations was 3.00. Sixty-three percent (5) of the respondents were either extremely satisfied or very satisfied with the ease of use of computers. The average rating for this category was 2.14.

Table 1. Satisfaction of respondents on aspects of using the library.

<table>
<thead>
<tr>
<th></th>
<th>Extremely Satisfied</th>
<th>Very Satisfied</th>
<th>Satisfied</th>
<th>Somewhat Satisfied</th>
<th>Not at All Satisfied</th>
<th>N/A</th>
<th>Average Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ease of Navigating Library</td>
<td>12%</td>
<td>38%</td>
<td>25%</td>
<td>25%</td>
<td>0%</td>
<td>0%</td>
<td>2.63</td>
</tr>
<tr>
<td>Visibility of Signs</td>
<td>0%</td>
<td>38%</td>
<td>50%</td>
<td>12%</td>
<td>0%</td>
<td>0%</td>
<td>2.75</td>
</tr>
<tr>
<td>Comfort of Tables and Chairs</td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
<td>0%</td>
<td>0%</td>
<td>25%</td>
<td>2</td>
</tr>
<tr>
<td>Ease of Moving Between Shelves</td>
<td>12%</td>
<td>38%</td>
<td>25%</td>
<td>25%</td>
<td>0%</td>
<td>0%</td>
<td>2.63</td>
</tr>
<tr>
<td>Ease of Use of Photocopiers</td>
<td>12%</td>
<td>25%</td>
<td>12%</td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
<td>3</td>
</tr>
<tr>
<td>Ease of Use of Printers</td>
<td>12%</td>
<td>12%</td>
<td>25%</td>
<td>0%</td>
<td>38%</td>
<td>12%</td>
<td>3.71</td>
</tr>
<tr>
<td>Comfort of Computer Workstations</td>
<td>12%</td>
<td>12%</td>
<td>38%</td>
<td>12%</td>
<td>12%</td>
<td>12%</td>
<td>3</td>
</tr>
<tr>
<td>Ease of Use of Computers</td>
<td>25%</td>
<td>38%</td>
<td>12%</td>
<td>12%</td>
<td>0%</td>
<td>12%</td>
<td>2.14</td>
</tr>
</tbody>
</table>
Interactions with Library Staff

The next set of questions asked the respondents to reflect on interactions with staff members at the UNC libraries. Based on the literature, it is apparent that interactions with staff play a large role in the satisfaction and comfort for people with disabilities when they are working in libraries; therefore, it is important to evaluate if the staff at UNC is providing a welcoming, comfortable environment. For the question, “have you ever asked a member of library staff for assistance,” 62.5% (5) answered yes and 37.5% (3) answered no. Of those who had asked a staff member for assistance, all found the staff to be helpful and adequately prepared. Some of the comments of the respondents were: “they were polite and helpful,” “I thought they were adequately prepared,” and “they were informative of how to get into Wilson Library without stairs, but that was after I had already walked to the stairs.” Respondents were then asked to rate their satisfaction of the UNC libraries staff on a variety of aspects. The options were: Extremely Satisfied, Very Satisfied, Satisfied, Somewhat Satisfied, Not at All Satisfied and Not Applicable. Each of the options was assigned a number value between 1 and 5, respectively. The complete results for this matrix of questions are listed in Table 2.

When asked if they were satisfied with how knowledgeable the staff was, 29% (2) chose very satisfied and 29% (2) chose satisfied. The average rating for knowledgeable staff was 2.50. The average rating for “Courteous staff” was 2.29, with 38% (3) of the subjects choosing very satisfied and 38% (3) choosing satisfied. In response to the prompt about “Caring Staff,” 50% (4) of the subjects were very satisfied. This category had an average rating of 2.14. The next question asked users how satisfied they were...
with the staff understanding their needs. Again, 50% (4) were very satisfied. This characteristic had an average rating of 2.50. The last question in this set about staff attributes was to evaluate the satisfaction of the subjects on the effectiveness of the teaching methods of library staff. Twenty-five percent (2) of the subjects were very satisfied and this group had an average rating of 2.40.

Table 2. Satisfaction of respondents on aspects of the library staff.

<table>
<thead>
<tr>
<th></th>
<th>Extremely Satisfied</th>
<th>Very Satisfied</th>
<th>Satisfied</th>
<th>Somewhat Satisfied</th>
<th>Not at All Satisfied</th>
<th>N/A</th>
<th>Average Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledgeable staff</td>
<td>14%</td>
<td>29%</td>
<td>29%</td>
<td>14%</td>
<td>0%</td>
<td>14%</td>
<td>2.5</td>
</tr>
<tr>
<td>Courteous staff</td>
<td>12%</td>
<td>38%</td>
<td>38%</td>
<td>12%</td>
<td>0%</td>
<td>0%</td>
<td>2.29</td>
</tr>
<tr>
<td>Caring staff</td>
<td>12%</td>
<td>50%</td>
<td>25%</td>
<td>0%</td>
<td>0%</td>
<td>12%</td>
<td>2.14</td>
</tr>
<tr>
<td>Staff Understands my Needs</td>
<td>0%</td>
<td>50%</td>
<td>12%</td>
<td>12%</td>
<td>0%</td>
<td>25%</td>
<td>2.5</td>
</tr>
<tr>
<td>Effective Teachers</td>
<td>12%</td>
<td>25%</td>
<td>12%</td>
<td>12%</td>
<td>0%</td>
<td>38%</td>
<td>2.4</td>
</tr>
</tbody>
</table>

**Web Accessibility**

The next section of the questionnaire examined the accessibility of the library’s website and electronic resources that are available through the website. Next to each question, a screen capture of the electronic resource that was being discussed was displayed to assist users in distinguishing between the different aspects of the library’s website. All of the respondents had, at least once, used the library’s website. Seventy-five percent (6) found that they could use the library’s website unassisted and it did not need to be adjusted to meet their needs. Twenty-five (2) percent require occasional help with using the library’s website because it was not well-suited to their needs. When asked if they had any suggestions for improving the usability of the library’s website,
only one subject responded and his statement was, “I do not know because my disability is mobility related.” It should be noted that the person who made this comment did not need assistance in using the library’s website.

A majority (87.5%; 7) of the subjects had used the library’s catalog to search for books and other materials. Of those subjects who had used the catalog, 87.5% (7) could use it unassisted and it did not need to be adjusted to meet their needs. One respondent required occasional help because it was not well suited to her needs. None of the subjects had suggestions for improving the usability of the library’s catalog.

The Article Databases section of the library’s website provides access to hundreds of electronic databases that index articles and other information on an enormous variety of topics. Seventy-two percent (5) of the respondents had used the Article Databases that are available and out of those respondents, eighty percent (4) could use it unassisted and did not need to have it adjusted to meet their needs. Twenty percent (1) needed occasional help because the Article Databases were not well-suited to their needs. There were no comments from the subjects on how to improve the usability of the Article Databases Section.

Seventy-two percent (5) of students had used the E-journals section of the library’s website. This section provides access to electronic content of journals. All of the subjects who had used the E-journals were able to use it unassisted and did not need to adjust it to meet their needs.

*Library Equipment*

The next section of questions examined the use of equipment provided by the libraries for physically disabled patrons. It is extremely interesting to discover that none
of the respondents had used any of the equipment available for their special needs. This equipment includes: visually enhancing output device or a visually enhancing input device (examples are screen magnification software, keyboards with large screens, and specially designed touch screens), audio or speech output or input device (examples are JAWS and voice recognition software) and tactile input and output devices (examples are Braille overlays on keyboards and a device that converts text into Braille.) From these results, it would seem that the subjects either use their own computers or the computers that the library provides for the entire campus population are satisfactory for the respondents of this survey. When asked what assistive equipment or software the subjects have on their own computers, twenty-five percent stated that they had no assistive software and 38% mentioned voice recognition software. In addition, one person uses a trackball and ergonomic keyboard and when asked what services/equipment she wished the library provided, she asked for a trackball.

*Overall Library Experiences*

The final section of the questionnaire asked the subjects to reflect on their experiences at the UNC libraries and other libraries and to describe both positive and negative experiences at those libraries. One respondent’s positive experience with a UNC library was that he found the chairs/tables in the Health Sciences Library to be comfortable. Some of the negative experiences were: “limited availability of computers on the second floor of the health sciences library”, “lack of parking near the health sciences library is obnoxious” and “lack of food or drink on the weekends in the health sciences library is a huge problem.”
Due to the small sample size, it is, unfortunately, difficult to generalize these results to the larger, physically-disabled community as a whole; however, there is still valuable information that can be extracted from these responses. First, although, a majority of the subjects felt that the library adequately promotes its services and equipment, there were several comments that implied that the library could improve on that aspect. In addition, one subject shared an anecdote where she had to climb the stairs to get into Wilson Library in order to determine how to enter the building through a handicapped entrance. It appears that there is at least some need for higher visibility of the accommodations that are available for physically disabled patrons at the libraries.

It is noteworthy that, overall, the subjects were satisfied with their interactions with the library staff. From the background literature, it is apparent that interacting with friendly and helpful staff is a vital aspect of the comfort of physically disabled patrons in libraries. And, ironically, dealing with physically disabled patrons can be an area where members of the library staff feel that they are not well-prepared or trained. This study did not look at the training or comfort of staff, therefore it is impossible to know whether the staff members feel at ease handling questions and requests from physically disabled patrons, but, it is pleasing to know that the subjects found the staff to be generally courteous, knowledgeable and caring.

Based on the responses to the questions regarding the usability of the library’s website and electronic resources, it appears that most of the subjects did not have difficulty accessing the resources. The website and electronic resources are obviously designed to comply with the Section 508 Standards for Web Accessibility and these Standards benefit physically disabled patrons at UNC. These accessible websites are not
only functional and valuable for physically disabled patrons; another benefit is that they are useful for patrons with learning disabilities, slow internet connections, etc.

It was a surprise to the researcher to discover that none of the subjects had used any of the equipment that is provided by the library specifically for physically disabled patrons. Because none of the respondents elaborated on why they had not used any of the equipment, it is only possible to speculate about the reasons. One theory, mentioned earlier, is that the physically disabled patrons use their own computer and assistive equipment instead of the libraries’. Another conjecture is that the subjects were not aware that the equipment was available and, therefore, had not used it. Another guess is that the computers that are available for the general public are configured in a way that makes them accessible to physically disabled patrons as well. If this study is ever replicated, further questions regarding the use and/or lack of use of the equipment provided by the libraries is recommended.

Conclusions

The goal of this study was to determine if the current level of service provided for physically disabled students by the Academic Affairs Library system at the University of North Carolina at Chapel Hill is adequate. The intention was that by assessing what is currently being offered and comparing it to the desires stated by the disabled patrons in the study’s surveys, it would become apparent whether there is a discrepancy between what the disabled patrons would like to have available and what actually exists. Due to the small sample size of this study, it is impossible to generalize the findings of this study to the community of physically disabled patrons at UNC. Also, the responses for many
of the questions of satisfaction with library services ranged from one extreme of satisfaction to the other; therefore, the average rating may not be indicative of a general consensus of satisfaction. However, the results are still valuable in that they draw attention to some issues that may need to be addressed by the libraries and they emphasize ways that the libraries are already successful in serving their physically disabled patrons.

It is recommended that further research be done on this subject. If this study were replicated, it would be the hope of the researcher that more students would participate in order to gather more information. Due to time constraints and a wish to respect the confidentiality of the potential participants, recruitment was accomplished solely via email invitations. In a duplicate study, it would be necessary to recruit individuals in alternative ways or to provide an enticement to complete the survey. Also, it was determined that a questionnaire was the most efficient and convenient way of gathering information for this study, but the opportunity to follow up on specific responses and questions would have been helpful. One element that was not examined in this survey was the nature of the physical disability of the participant. In some cases, this became evident through responses to the open-ended questions, but for the majority of respondents, their disability was not known. The type of disability that each respondent has may not have been relevant, but it also may have helped to illuminate some of the disparities among the responses.

Many libraries provide services to physically disabled patrons in order to comply with the Americans with Disabilities Act, Section 508 Standards and a professional belief in equal access for all. Creating services in response to these regulations and philosophy
is adequate, but it is also necessary to examine ways in which the libraries can improve services beyond what is merely adequate. Training staff to be courteous and helpful to all patrons will help to improve perceptions of the library and will enable users with invisible disabilities to get the service they require. Designing a website that is completely accessible for a variety of physically disabled users makes it easier for patrons who access the electronic resources through a variety of technological devices. Training instructors to use multi-sensory teaching methods allow students who learn in different ways to absorb the information. The results of this study have hopefully identified changes that need to be made at the UNC-Chapel Hill Academic Affairs Libraries, and highlighted ways in which the libraries are succeeding. However, as technology changes and new students enroll at the University, it is necessary to constantly reexamine these issues and implement new processes to meet patrons’ needs.
References


<http://eresources.lib.unc.edu/eid/list.php?letter=A>


<http://eresources.lib.unc.edu/eid/list.php?letter=A>


Carolina at Chapel Hill Academic Affairs Libraries. 15 April 2005.

<http://eresources.lib.unc.edu/eid/list.php?letter=A>


<http://eresources.lib.unc.edu/eid/list.php?letter=A>


<http://eresources.lib.unc.edu/eid/list.php?letter=A>
Hello!

I am a graduate student in the School of Information and Library Science and for my master’s research, I am attempting to evaluate the services that are provided by the UNC-Chapel Hill libraries to physically disabled students.

I am contacting you because you are self-identified as someone who has a physical disability with the UNC Office of Disability Services and I would like to determine how satisfied you are with the current level of service provided by the UNC libraries. I hope you will choose to participate. If you choose to participate, your responses will be held in confidence. No identifying links between responses and the individual responding will be retained. Participation is completely anonymous. I have asked Jim Kessler, from the Office of Disability Services, to contact you and I will never have access to the names of the recipients of this email. The survey should take no longer than twenty minutes to complete.

I would certainly appreciate it if you would complete the online survey at [URL to be determined] right now, or within the next few days.

If you would prefer to complete the survey in paper format or as an in-person interview, please contact me at eisenman@email.unc.edu to make arrangements.

Many thanks for helping out. Once I have compiled the data, I will be passing the information on to library administrators. There could potentially be changes made in the library based on your responses. If you have any questions or would like further information about my research, please feel free to contact me.

Thank you,

Halle Eisenman
Masters Candidate, School of Information and Library Science, UNC-Chapel Hill
eisenman@email.unc.edu
Appendix B – Follow-up Email

Hello!

Approximately one week ago, I sent out an email requesting your participation in an online survey regarding the services that are provided by the UNC-Chapel Hill libraries. I would like to thank all of you who have chosen to participate.

If you have not completed the survey yet, it is not too late. The survey takes approximately twenty minutes to complete and examines how satisfied you are with the current level of service provided by the UNC libraries. All responses are completely anonymous.

To complete the survey, please go to [URL to be determined]. If you would prefer to complete the survey in paper format or as an in-person interview, please contact me at eisenman@email.unc.edu to make arrangements.

Many thanks for helping out. Once I have compiled the data, I will be passing the information on to library administrators. There could potentially be changes made in the library based on your responses. If you have any questions or would like further information about my research, please feel free to contact me.

Thank you,

Halle Eisenman
Masters Candidate, School of Information and Library Science, UNC-Chapel Hill
eisenman@email.unc.edu
Appendix C - Questionnaire

Please indicate your age:
- 17-25
- 26-35
- 36-45
- 46-55
- 55+

Please indicate your level of academic study:
- Freshman
- Sophomore
- Junior
- Senior
- Graduate Student
- Other ________________

Please choose your sex:
- Male
- Female

Library Services

Please indicate how often you use the UNC library system:
- 0-3 hours per week
- 4-7 hours per week
- 8-11 hours per week
- 12-15 hours per week
- 16+ hours per week

If you do not use the UNC library system, please indicate why:

Please check all of the UNC libraries that you have visited in the past year:
- Davis (Main) Library
- Undergraduate Library
- Botany Library
- Zoology Library
- Bauer Math/Physics Library
- Wilson Library
- Information and Library Science Library
- Art Library
- Chemistry Library
- Law Library
- Health Sciences Library
- Music Library
- School of Government Library
- Stone Center Library
In the past year, have you used any libraries other than the UNC library system?

- Yes
- No

If yes, please list the names of the libraries you have used:

Please rate the quality of the reference services for students with disabilities. (This would involve services such as the librarian assisting you in locating a book, performing research, instructing you on how to use the library’s resources, etc. These services can be performed in person or virtually, via Instant Messenger, email, or telephone.)

- Excellent
- Good
- Average
- Fair
- Poor
- I have never used the reference services

Why do you say this?

Please rate the quality of the circulation services for students with disabilities. (This involves services regarding checking in/out books, placing books on hold, etc.)

- Excellent
- Good
- Average
- Fair
- Poor
- I have never used the circulation services

Why do you say this?

Please rate the quality of the interlibrary loan services for students with disabilities. (This includes services where you locate and obtain materials from libraries outside of the UNC system)

- Excellent
- Good
- Average
- Fair
Poor  
I have never used the interlibrary loan services

Why do you say this?

Please rate the quality of library instruction for students with disabilities. (This includes any instruction sessions that were taught by a member of the library staff. If you are an undergraduate, this would include the classes that you had in the library during English 10, 11, and 12)

- Excellent
- Good
- Average
- Fair
- Poor
- I have never attended a library instruction session

Why do you say this?

Do you feel that the library adequately promotes its services and equipment that are available for physically disabled patrons?

- Yes
- No

Why do you say this?

Please rate how satisfied you are with the following: (5 extremely satisfied, 1 not at all satisfied)

- Ease of navigating the library
- Visibility of signs and directional information
- Comfort of chairs and tables
- Ease of moving between shelves
- Ease of use of photocopiers
- Ease of use of printers
- Comfort of computer work stations
- Ease of use of computers

**Interaction with Staff**

Have you ever asked library staff for assistance?

- Yes
- No

If yes, did you feel that the staff was adequately prepared to help you?
Please rate your satisfaction of the UNC libraries staff on the following:

<table>
<thead>
<tr>
<th></th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledgeable staff</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>Courteous staff</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>Caring staff</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>Staff understands my needs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
</tbody>
</table>

Please share any additional comments that you have about the UNC libraries staff:

**Web Accessibility**

Have you ever used the library’s website and/or online resources (E-Journals, Catalog, Article Databases, etc.)?
- Yes
- No

If yes, please answer the following questions:

Have you used the library’s website?
- Yes
- No

If yes, please indicate how easy it was to use:
- You could use it unassisted, and it did not need to be adjusted to meet your needs
- You could use it unassisted, once it had been set up to meet your needs
- You required occasional help, because it was not well suited for your needs
- You require frequent help, because it was not well suited to your needs
- You could not use it at all because it was not suited to your needs

What suggestions do you have for improving the usability of the library’s website? (Examples could be page layout, font size, color contrast, etc.)
Have you used the library’s catalog to search for books and other materials?

- Yes
- No

If yes, please indicate how easy it was to use:

- You could use it unassisted, and it did not need to be adjusted to meet your needs
- You could use it unassisted, once it had been set up to meet your needs
- You required occasional help, because it was not well suited for your needs
- You require frequent help, because it was not well suited to your needs
- You could not use it at all because it was not suited to your needs

What suggestions do you have for improving the usability of the library’s catalog examples could be page layout, font size, color contrast, etc.)
Have you used the Article Databases that are accessed through the library’s website? (Examples: Academic Search Elite, PsychInfo, ERIC, Biosis)

- Yes
- No

If yes, please indicate how easy it was to use:

- You could use it unassisted, and it did not need to be adjusted to meet your needs
- You could use it unassisted, once it had been set up to meet your needs
- You required occasional help, because it was not well suited for your needs
- You require frequent help, because it was not well suited to your needs
- You could not use it at all because it was not suited to your needs

What suggestions do you have for improving the usability of the Article Databases? (Examples could be page layout, font size, color contrast, etc.)

Have you used the E-journals that are accessed through the library’s website?

- Yes
If yes, please indicate how easy it was to use:

- You could use it unassisted, and it did not need to be adjusted to meet your needs
- You could use it unassisted, once it had been set up to meet your needs
- You required occasional help, because it was not well suited for your needs
- You require frequent help, because it was not well suited to your needs
- You could not use it at all because it was not suited to your needs

What suggestions do you have for improving the library’s E-journals section? (Examples could be page layout, font size, color contrast, etc.)

**Equipment and Software**

Have you ever used a visually enhancing output device, provided by the library? (Example: Screen magnification software, large monitors, physical magnifiers)

- Yes
- No

If yes, please indicate how easy it was to use:

- You could use it unassisted, and it did not need to be adjusted to meet your needs
- You could use it unassisted, once it had been set up to meet your needs
- You required occasional help, because it was not well suited for your needs
- You require frequent help, because it was not well suited to your needs
- You could not use it at all because it was not suited to your needs

If you have ever used a similar service elsewhere that suited your needs better, please share what it was and what made it better…

Have you ever used a visually enhancing input device, provided by the library? (Example: Keyboards with large buttons or specially designed touch screens)

- Yes
- No

If yes, please indicate how easy it was to use:
You could use it unassisted, and it did not need to be adjusted to meet your needs
You could use it unassisted, once it had been set up to meet your needs
You required occasional help, because it was not well suited for your needs
You require frequent help, because it was not well suited to your needs
You could not use it at all because it was not suited to your needs

If you have ever used a similar service elsewhere that suited your needs better, please share what it was and what made it better…

Have you ever used an audio or speech output device, provided by the library? (Example: JAWS, PW Webspeak)
  o  Yes
  o  No

If yes, please indicate how easy it was to use:

  o  You could use it unassisted, and it did not need to be adjusted to meet your needs
  o  You could use it unassisted, once it had been set up to meet your needs
  o  You required occasional help, because it was not well suited for your needs
  o  You require frequent help, because it was not well suited to your needs
  o  You could not use it at all because it was not suited to your needs

If you have ever used a similar service elsewhere that suited your needs better, please share what it was and what made it better…

Have you ever used an audio or speech input device, provided by the library? (Example: Voice Recognition Software)
  o  Yes
  o  No

If yes, please indicate how easy it was to use:

  o  You could use it unassisted, and it did not need to be adjusted to meet your needs
  o  You could use it unassisted, once it had been set up to meet your needs
You required occasional help, because it was not well suited for your needs
You require frequent help, because it was not well suited to your needs
You could not use it at all because it was not suited to your needs

If you have ever used a similar service elsewhere that suited your needs better, please share what it was and what made it better…

Have you ever used a tactile output device, provided by the library? (Example: a device that converts text into Braille)
Yes
No

If yes, please indicate how easy it was to use:
You could use it unassisted, and it did not need to be adjusted to meet your needs
You could use it unassisted, once it had been set up to meet your needs
You required occasional help, because it was not well suited for your needs
You require frequent help, because it was not well suited to your needs
You could not use it at all because it was not suited to your needs

If you have ever used a similar service elsewhere that suited your needs better, please share what it was and what made it better…

Have you ever used a tactile input device, provided by the library? (Example: Braille overlay on a keyboard to enable you to feel characters)
Yes
No

If yes, please indicate how easy it was to use:
You could use it unassisted, and it did not need to be adjusted to meet your needs
You could use it unassisted, once it had been set up to meet your needs
You required occasional help, because it was not well suited for your needs
You require frequent help, because it was not well suited to your needs
You could not use it at all because it was not suited to your needs
If you have ever used a similar service elsewhere that suited your needs better, please share what it was and what made it better…

What assistive equipment and/or software do you have on your own computer?

What services/equipment do you wish the library provided?

**Library Experiences**

Overall, thinking about your experiences at the UNC libraries, can you describe a positive experience you have had?

Overall, thinking about your experiences at the UNC libraries, can you describe a negative experience you have had?

Overall, thinking about your experiences in ANY library, can you describe a positive experience?

Overall, thinking about your experiences in ANY library, can you describe a negative experience?

If you have any other comments about the UNC library system, please feel free to share it:

Thank you for taking the time to complete this survey. I appreciate your involvement. If you would like to see the results of this study, please send an email to eisenman@email.unc.edu.