

Opportunities and Challenges for the Visually Impaired Patron in Academic Libraries

David S. Robertson

University of West Georgia

Submitted: November 28, 2011

Introduction

What opportunities and challenges do visually impaired patrons face in academic libraries? This question succinctly summarizes the purpose of this research study. Persons with disabilities are an ever-growing segment of any population. Bonnici, Maatta, and Wells (2009) suggest that “all nations are home to citizens who have congenital or acquired physical or mental disabilities that impede information access” (p. 513).

To gain a numerical perspective of the scope of the problem, the excellent work of Robin Leonard (2002) was consulted in his helpful research report entitled, “Statistics on Vision Impairment: A Resource Manual.” Leonard compiled statistics from a number of national and international agencies to help the reader understand the real numbers of people affected by visual impairment in this country and abroad. Leonard (2002) reports that an estimated 8.3 million persons of all ages in the United States suffer from a visual impairment of some kind (p. 5). The researcher defined visual impairment as “blindness in one or both eyes, or any other trouble seeing even when wearing glasses” (Leonard, 2002, p. 6). Leonard (2002) writes that globally there are an estimated 180 million people who have a visual impairment, and of these between 40 and 45 million persons are completely blind (p. 7). In this paper, whenever the term “*visually impaired*” is used, it is referring to any person who is blind, low vision, or print disabled. For further clarification, *adaptive technology* and *assistive technology* are synonymous and used interchangeably.

The impact of an impairment in a person’s vision ranges from inconvenient to debilitating. It can mean the difference between a quality of life based on a limited income (such as disability) to a lifetime relegated to abject poverty, depending on national residency. This topic is of paramount importance to

library professionals desiring to add value to an often marginalized segment of the population, the visually impaired.

To say that new opportunities exist to enable and empower the visually impaired student is a gross understatement. With the advent of the Internet and its ubiquitous presence in our society, even a blind patron can cultivate fresh vision for a brighter future. Advances in adaptive technologies in academic libraries have been nothing short of transformational. Combined with intelligent software designed to seamlessly integrate the Internet with accessible computer hardware, visually impaired patrons using academic libraries cannot only survive and succeed in their educational development, but they can now graduate into a season of professional significance. Yet with all the advancements technologically, legislatively, and socially for the visually impaired library patron, substantial challenges remain. This study will seek to identify both the major opportunities and challenges visually impaired patrons face in academic libraries across the nation.

The Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA), which became law in 1990, have each served to level the playing field considerably for all persons with disabilities. In 1998, Congress amended the Rehabilitation Act to require Federal agencies to make their electronic and information technology accessible to all handicapped persons. Section 508 was enacted to reduce barriers to information technology. These federal codes will serve as the framework for how this research plan is executed and interpreted. In compliance, academic libraries have reconfigured the physical elements of the library (ramps, elevators, electric assist doors, etc.) for the disabled patron. Additionally, library administrators have also rewritten policies and procedures to incorporate concepts like “reasonable accommodations,” “inclusion,” and “universal design.”

While a renaissance of opportunity for the visually impaired patron is underway, significant challenges endure. For example, even though blatant discrimination is now illegal, latent discrimination persists. Another objective this research study intends to show is that emerging technology is not necessarily accessible technology. For instance, a sighted library patron may petition the campus library to upgrade its computers to the latest version of Microsoft Windows, but in so doing this might cause assistive technology to cease to work. The research plan will spotlight one particularly troublesome

challenge visually impaired students are forced to contend with, and that is using proprietary database search engines for scholarly research. The prior literature studied will indeed show that this challenge remains a substantial obstacle to the present day.

The goal of this research is to contribute to the knowledge base on identifying emerging technologies that are promulgating extraordinary opportunities for the visually impaired patron in an academic library context. Additionally, the research will seek to identify major challenges that hinder the full potential of these technologies being implemented into the daily lives of the visually impaired. So, the pathway to equal access for the visually impaired library patron is less like an interstate and in fact more resembles a railroad track with one rail representing opportunities and the other challenges.

Literature Review

The prior literature is best understood within the context of the research questions: what opportunities and challenges do visually impaired patrons face in academic libraries? What are the indicators based on the literature? The research strategy for this literature review was to draw primarily from peer-reviewed journal articles published between the years 2004-present. Other articles were included outside these parameters to expand the scope of the body of literature for a better understanding of global issues to answer the research question. The research plan obtained scholarly articles using academic search databases like EBSCO, Academic Search Premier, and Emerald focusing searches primarily in the field of library science. Within the field, two key categories were targeted relating directly to the research: opportunities and challenges for the visually impaired patron. Based on these search parameters, more than an adequate amount of dependable and trustworthy research papers were located.

A subset of the handicapped population, visually impaired persons, has essentially the same needs and desires for information to conduct their daily and business lives as those who are without a visual impairment. Tatomir and Durrance (2010) write:

Information access represents a fundamental need of citizens within any society. From understanding legal rights and obtaining medical information, to attending school and earning a

college diploma, all individuals in theory should possess unhindered access to a wide variety of options and tools capable of completely fulfilling information needs. (p. 577)

As the authors above contend, nearly every (adult) global citizen has legitimate needs to access the Internet. Sadly, the disabled in general and the visually impaired in particular are often marginalized, and open access is not necessarily tantamount to equal access.

Interestingly, visually impaired persons are returning to and prospering in institutions of higher education in large numbers. Dermody and Majekodunmi (2011) report that, "More and more students with disabilities are graduating from higher education institutions. There is no doubt that technology has opened the door for students with disabilities" (p. 150). Vocational Rehabilitation and Disabled Student Services partner together to play an integral role in helping the visually impaired student adjust to campus life.

The campus library is a wellspring of resources for all students in most university settings. While emerging technologies in academic libraries are presenting unprecedented benefits for the visually impaired, challenges continue to exist. One of the authors in the collection, Sue Samson (2011), contends: "The passage of ADA ... did not automatically eliminate barriers and discrimination towards the disabled community any more than the passage of the Civil Rights Act of 1964 eliminated a culture of discrimination towards Americans of color" (p. 260). This statement should be a clarion call for equal access and universal design as societal priorities to reduce and, ideally, eliminate discriminatory conditions as exemplified in Samson's assertions.

The literature shows that significant opportunities are emerging and technology is dramatically impacting the way libraries serve patrons in the 21st century. The phenomenon of Facebook use on college campuses has transformed the social possibilities for visually impaired students (Charnigo & Barnett-Elliis, 2007). Mary Ann Kajewski (2011) identifies free Web 2.0 tools that both librarians and patrons can benefit from citing examples of each. This list includes blogs, wikis, podcasts, vodcasts, RSS aggregators, web conferencing, and instant messaging. The author goes on to explain how these utilitarian tools can enhance one's appreciation for and participation in the library community.

Susan Beatty (2010) describes in detail the round-the-clock information commons that the library provides for the students at the University of Calgary in Alberta, Canada. The author's descriptive narrative provides an outstanding model for blending hardware/software support and reference librarians into a one-stop service center with areas dedicated to students with disabilities and an emphasis on universal design.

Kwak and Bae (2009) offered a unique perspective into what the authors "...claimed to be the world's first ubiquitous library for the blind ... developed by the LG Sangnam Library" (p. 624). This study was unique in that it focused exclusively on the innovative concept of using state-of-the-art technology to untether the visually impaired patron from sole reliance on computers in lieu of mobile devices. The pair of researchers presents an entirely new service model (p. 624).

While opportunities discovered in the literature are too numerous to discuss in a brief literature review of this nature, suffice it to say that a new era of possibilities has dawned to advance the cause of the visually impaired patrons in academic libraries.

Predictably, significant challenges will continue to exist alongside of progressive opportunities. The literature review focused on usability access to online databases for the visually impaired - (Byerley et al., 2007; Dermody & Majekodunmi, 2011; Kwak & Bae, 2008; Tatomir & Durrance, 2010). The consensus reached by these independent research studies provide evidence that the technology is not user-friendly, effective, and in some cases, impossible to produce academic search results for patrons using text-to-speech readers (such as Kurzweil 3000, JAWS, or Zoom Text).

After reviewing the literature, the conclusion of the matter is that opportunities and challenges seem to be perpetual traveling companions. The implication however is clear: times have never been better for the visually impaired academic patron. Even university libraries on limited budgets have inexpensive accessibility options available such as magnification applications, optical character recognition (OCR), screen readers, specialized hardware, and text-to-speech applications (Vernon, 2010). While some technical innovations are not available for purchase at any price to help the plight of the visually impaired patron, the literature shows that limited funding continues to be the bane of many

academic libraries that genuinely desire to surmount the challenges facing this minority but simply cannot afford to do so.

Problem Statement

What opportunities and challenges do visually impaired patrons face in academic libraries? This is the primary driving questions but it necessarily leads to other questions. The literature provides a historical snapshot but since technology changes so rapidly, what new opportunities have emerged since the dated research was conducted? Do new adaptive technologies exist? What new software packages been created to offset the problems faced by the visually impaired patron? Have new policies been written to lessen the marginalization of this minority? These and other questions will find their answers in the results of this research plan.

Servicing a visually impaired library patron is unlike dealing with any other student who has no vision problem. A visually impaired person contends with variables including needing extra time to perform basic functions. There is a safety factor for themselves and those around them. Life usually costs more to be visually impaired with optical examinations, additional prescriptions, glasses or contacts, assistive technologies, and in some cases, the need for a service animal. Then there are intangible effects including the subtle stigma of being visually impaired, social alienation, discrimination, lack of career choices, and associated physical ailments.

The two broad categories at hand – opportunities and challenges - provide the crux of the problem to be researched. An exploratory process will need to be undertaken to gather data from human subjects first hand.

Research Methodology

Research Design

The plan will employ a qualitative research approach. According to Johnson and Christensen (2007), qualitative design is a legitimate research paradigm. The researcher desires that the results be presented as a discussion of trends and/or themes based on words, not statistics. The study will be inductive in nature rather than approaching the research task with preconceived notions based on

published theory and prior research. The research design will include survey instruments that lend to the collection of words, perceptions, and experiences of both positive opportunities and negative challenges experienced in an academic library setting.

Setting

The venue for the research will be the Adaptive Technology Center (ATC), in Room 174 of the James E. Walker Library at Middle Tennessee State University (MTSU) located in Murfreesboro, Tennessee. The ATC is home to the most advanced adaptive technologies on the MTSU campus and currently services over 100 disabled students each week.

Participants

The target population is fifty visually impaired undergraduate students registered at Middle Tennessee State University for the Fall semester of 2012. Participants must be registered and on file with the campus Disabled Student Services (DSS) office. Further, participants must be regular users of the ATC. "Regular use," for the purposes of this research, will be defined as any visually impaired student who is not a first-time user of the ATC.

MTSU boasts a large non-traditional student population, so the study expects that many of the participants will be outside the traditional 18-22 age range of undergraduate students. Also, the G.I. Bill funds many veterans returning to school, some with injuries relating to vision, so the study expects some of the participants to be veterans (the demographic section of the participant survey will capture this data).

The research plan calls for a purposive sample of individuals from the target population that will provide key information in terms of the opportunities and challenges faced by a typical visually impaired library patron. The sample size for the target population will attempt to collect fifty surveys, conduct twenty in-depth interviews, and document ten observations over a two-week period of time. All participation will be voluntary and non-paid. The compensation offered will be to add to the larger body of knowledge to better improve conditions in academic libraries for visually impaired patrons. All participants will be required to read (or have a sighted helper read the document) and sign a consent form (please see

Appendix A).

Types of Data

Participant Data

Participants will be asked to disclose if they are blind or low vision, and will be asked to list the specific eye disorder(s) that they have. Inquiry will be made to verify if participants are registered with the DSS office or with the Vocational Rehabilitation (VR) through the Department of Human Services (DHS) for the State of Tennessee. Visually impaired patrons will be surveyed to collect data based on their experience with adaptive technology which includes (but is not limited to):

- Screen readers
- Screen magnifiers
- JAWS
- Zoom Text
- Kurzweil 3000
- Speech-to-text services
- Tactile graphics
- Enlarge print materials
- Other

The confidence level of future post-graduation career opportunities will be gathered using the following scale: not confident, somewhat confident, confident, and very confident. While the surveys are anonymous, demographic information will be collected which includes: current age, ethnicity, type of community the participant resides in (rural/suburban/urban), college grade level, and gender.

The interview process will consist of five open-ended questions:

1. What opportunities have adaptive technology and/or user services in the library provided for you as a visually impaired person?
2. What have you found most helpful?

3. What challenges have adaptive technology and/or user services (or lack of) in the library provided for you as a visually impaired person?
4. What have you found most challenging?
5. Anything else you'd like to say?

Finally, the data collected in the observation test involving two academic database searches by ten research subjects will yield results on the effectiveness of the EBSCO and JSTOR datasets and answer compatibility/accessibility questions.

Student Worker Data

Student workers (who also will be required to complete a consent form before participation is allowed) will complete a self-reporting questionnaire to collect data from their unique perspective on what opportunities/challenges they see the ATC as providing for their visually impaired constituents. The research design calls for the collection of demographic data about the student workers as well. Since the student workers are cross-trained on the use of all assistive technology in the ATC, they will be asked to identify the most helpful hardware equipment and software applications in servicing their clientele. Finally, student workers will provide data as to their informed opinion about the challenges that they see and the potential solutions to improve library user services to visually impaired patrons.

ATC Coordinator Data

The ATC Coordinator (Amy Burks) will be interviewed in an unstructured interview process to collect valuable insights from the person who is most qualified to comment on opportunities/challenges (both current and future) in the ATC for the visually impaired patron.

Data Collection Strategy

The principal investigator and the research team will be the personnel collecting data from the target population from the survey instruments. To establish the dependability and trustworthiness of the data, the research plan calls for quality controls to be integrated as part of the data collection strategy.

These include:

Data triangulation – The first technique is to use multiple sources for obtaining data to answer the research question. Three unique perspectives will be gathered using the interview method: the ATC Coordinator (Amy Burks), ATC student workers, and visually impaired patrons. To the extent that these three groups provide similar information, the data will be corroborated.

Methods triangulation – The second quality control technique to be applied will revolve around the research participant. Three types of qualitative research approaches will be used: survey, interviews, and observation.

Researcher triangulation – The final technique to be utilized will involve creating a research team. According to the design plan, three types of researcher will be used to form a team: the principal investigator, paid student workers, and student volunteers. For even greater quality control purposes, the research team will be comprised of persons with diverse backgrounds as demonstrated in Table 1 below.

Table 1			
<i>Research Team Composition</i>			
Quantity	Researcher type	Vision Status	Gender
1	principal investigator (author)	visually impaired	male
1	student worker	sighted	male
1	student worker	visually impaired	male
1	student worker	sighted	female
1	student worker	visually impaired	female
1	patron volunteer	sighted	male
1	patron volunteer	visually impaired	male
1	patron volunteer	sighted	female
1	patron volunteer	visually impaired	female
Total = 9			
Table 1			

Note: the research plan acknowledges that all observational processes are inherently subjective and open to interpretation, therefore the research architect, who is a visually impaired person, will disclose this fact to participants in order to hopefully establish common ground and combat attrition from the study.

Data Instruments

Since the research design calls for a methods triangulation approach to collect data, the three instruments will be surveys, interviews, and observations. In order to ensure that the instruments created by the principal investigator are valid, the research design plan calls for collaboration with two colleagues (who have successfully published research papers) to gain insight on instrument design. After editing and final revisions, the instruments will be implemented.

Consent form (Appendix A) – Participation in the study is voluntary and all subjects will be required to complete a consent form (signed by the participant, the researcher, and a witness) before being permitted to join the study.

Surveys (Appendix B and Appendix C) – Two surveys will be used, one for the student participant, and the other for the paid student workers. The research plan is open to the idea of making adjustments to the instrumentation, such as rewording questions or adding questions, based on responses of participants. The surveys will collect demographic information about the visually impaired patrons including the nature of their disability (please see Appendix B). Students will be asked to identify both opportunities that they have found helpful and challenges they have found difficult to overcome using open-ended questions. A self-reporting “Student Workers Questionnaire” will ask open-ended questions to gain perspective on the opportunities and challenges faced from the patrons they serve on a day-in, day-out basis (please see Appendix C).

Interviews (Appendix D) – Five open-ended questions form the interview process. It is estimated that the entire interview process should not exceed 20-30 minutes per participant.

Observations (Appendix E) – The observation test will focus on one primary challenge area that the literature review identified as a major obstacle for the visually impaired patron – academic database

searches using adaptive technology. Using a speech reader of choice (JAWS, Zoom Text, or Kurzweil 3000), participants will attempt two academic searches. The first will use the EBSCO dataset applying the search conditions of full text and peer reviewed on the phrase: "students with visual impairments." The second search will use the JSTOR dataset with identical search parameters. Each participant will be observed opening the first article the search produces and record the results (successful or not and noting the elapsed time) of accessing the full-text PDF using the assistive technology. There will be a fifteen minute time limit to complete the assignment, after which the research team member will intervene to stop the observation period to collect and document the participant's perspective of the experience. The researcher team member will then allow the participant to share final thoughts about the experience.

Plan for Data Analysis

The research design intends to follow the sound advice offered by Johnson and Christensen (2012) who state that: "Data analysis requires the reduction and interpretation of the voluminous amount of information collected. Analysis of this volume of data requires reduction to certain patterns, categories, or themes, and which are interpreted by using some schema" (p. 93).

Data from the surveys (50 units), interviews (20 units), and observation periods (10 units) will be compared and cross examined employing the principles of grounded coding. First, the data will be open-coded to inductively identify categories. Next, axial coding will be used to organize and prioritize categories. The research team will collaboratively participate in the coding process to ensure intercoder reliability. As the coding takes place by the research team, a "master list," will be compiled of codes (i.e., most popular assistive technology hardware, most popular adaptive technology software, etc.). During the data analysis process, which will take place over a two-week time period following the conclusion of the data collection period, new codes will be added to the master list and reapplied, if necessary, to the rest of the data.

Surveys – Demographic data will be examined and entered into an Excel spreadsheet to run mathematical formulas to any data that can be quantified to convert into percentages and graphically illustrated as figures, pie charts, and/or tables in the findings section of the research paper.

Interviews – Participant responses to open-ended questions will be documented in writing by the research team and then compiled into a single Excel spreadsheet for coding and analysis.

Observations – The results of the observation test involving ten volunteers performing two academic searches (EBSCO and JSTOR) will be documented. Additionally, data will be collected on:

- Which text-to-speech reader did the participant choose?
- Which database performed successfully?
- Was the visually impaired patron able to complete the task within the 15-minute time limit?
- How did the participant feel about the experience?

Conclusions from the study will be limited to only the individuals who were directly studied and not generalize the findings to a larger population. Even though data instruments cannot be traced back to individual test subjects, all instruments will be appropriately secured using generally accepted security measures. After all the data are compiled into a master Excel spreadsheet and fully integrated into a research report, the original documents will be destroyed (shredded) after a three-month period of time has elapsed.

Limitations or Challenges

The research design admits that there are shortcomings that will doubtless result in a shortfall of data. These limitations include a small sample size (50 subjects). Fifty subjects are a poor representation of a much larger population. Since this is not a quantitative study, the results cannot be generalized to the entire population. The design limits participation to visually impaired students who are registered users with the DSS office. This will eliminate any disabled community users from being included in the study that may frequent the ATC. Since the design does not specify gender ratios, the results may be lopsided if analyzed by gender.

Additionally, training of the research team may be insufficient to ensure good data collection practices. Further, it is unclear whether or not the twenty students who will be targeted for interviews will be able to actually do face-to-face interviews or would prefer to participate in an interview over the

telephone. If the telephone interview option is not offered, it is unclear how this will affect participation in the study.

The observation test only uses two academic search engines out of a large number of other proprietary databases available at most academic libraries. If these two databases happen to both prove to be incompatible and inaccessible for patrons using text-to-speech readers, then the study will necessarily need to change search engines on the fly.

It is unclear whether or not the data will differ based on the type of researcher who conducts the interviews and observations (principal investigator, paid student worker, or student volunteer). As can be seen, a number of challenges are present that may limit the data collection process.

Timeline

The research design calls for a well-thought out timeline to set in motion the chronology of each major step. In order for the research plan to be successful, the sequence of events must be carried out in the order listed in Table 2.

Table 2	
<i>Timeline</i>	
Date(s)	Research Element
October 2-8, 2012	Develop first draft of all instruments (surveys, interview questions, and observation test parameters)
October 9-15, 2012	Submit instruments to two colleagues who have published research papers for revisions
October 16-22, 2012	Produce final survey instruments
October 24, 2012	Meet with Amy Burks, the ATC Coordinator to obtain permission to conduct the research and confirm the test period
October 25, 2012	Meet with Janet Norman, the Assistant Director of the DSS to broadcast research study opportunity to all visually impaired students

	in the database
October 26-November 12, 2012	Promote the research study in the ATC
November 4-5, 2012	Recruit research team
November 6-12, 2012	Train research team
November 13, 2012	Research study with participants begins
November 26, 2012	Research study with participants closes
November 27, 2012	Data analysis period begins
December 10, 2012	Data analysis period ends
December 12-18, 2012	Principal investigator crunches numbers in Excel and writes final paper with findings
December 19, 2012	Post-research team debrief to report results and thank the research team for their participation
December 20, 2012	Post-research meeting with Amy Burks, ATC Coordinator for debriefing
December 21, 2012	Post-research meeting with Janet Norman of the DSS for debriefing
Table 2	

The further in advance the research timeline can be prepared the better. Since there are a number of key people involved, scheduling and logistics play a vital role. Promotion and marketing of the research study also is critical. Well-designed instruments and a trained research team do little good if only a few visually impaired students are willing to participate. As always, some dates may be subject to change and flexibility and margin are always welcome additions to any timeline.

Concluding Summary

What opportunities and challenges do visually impaired patrons face in academic libraries? The quest to answer this question has been the driving force for every aspect of the research design. The introduction showed that this topic is relevant to approximately 180 million people worldwide who suffer from visual impairments that may have occasion to visit an academic library someday. The literature review provided a glimpse of exciting opportunities that are already in existence and ready for immediate

use to help diminish, and in some cases eliminate, a visually impaired library patron's inability to function confidently and competently in a higher education environment. The prior literature also showed that not everyone is benefitting from the technological age of enlightenment. The data show that often visually impaired persons are left to contend with antiquated hardware/software that is not accessible with their adaptive technology. To restate a key thought emphasized from the outset: the pathway to equal access for the visually impaired library patron is less like an interstate and in fact more resembles a railroad track with one rail representing opportunities and the other challenges.

The research design would have liked to have expanded its scope by including a case study (involving 2-3 visually impaired students). Furthermore, a focus group of three to seven from the target group would have been helpful to better formulate survey instruments.

In conclusion, the big idea is that life today is better than it was in the past for the visually impaired library patron. Perhaps it is said best by Katherine Schneider in her article, "I Love Libraries, and I'm Blind:"

Technology has helped to make so much possible. But it is libraries and librarians who enable my full participation in the world ... If we all continue to work together, "have you read any good books lately?" can be a question all of us, both sighted and blind, can answer with a resounding, "Yes!" (Schneider, 2008, p. 43)

References

- Beatty, S. (2010). Information commons, University of Calgary: Providing service through collaboration and integration, *Journal of Library Administration*, 50(2), 145-159.
- Bonnici, L.J., Maatta, S.L., & Wells, M.K. (2009). US national accessibility survey: Librarians serving patrons with disabilities. *New Library World*, 110(11/12), 512-528.
- Byerley, S.L., Chambers, M.B., & Thohira, M. (2007). Accessibility of Web-based library databases: The vendors' perspectives in 2007. *Library Hi Tech*, 25(4), 509-527.
- Charnigo, L., & Barnett-Ellis, P. (2007). Checking out Facebook.com: The impact of a digital trend on academic libraries. *Information Technology & Libraries*, 26(1), 23-34.
- Dermody, K., & Majekodunmi, N. (2010). Online databases and the research experience for university students with print disabilities. *Library Hi Tech*, 29(1), 149-160.
- Johnson, B., & Christiansen, L. (2012). *Educational research: Quantitative, qualitative, and mixed approaches (fourth edition)*. Los Angeles: Sage.
- Kajewski, M.A. (2011). Emerging technologies service delivery models. *Reference & User Services Quarterly*, 50(4), 380-391.
- Kwak, S., & Bae, K. (2008). Ubiquitous library usability test for the improvement of information access for the blind. *The Electronic Library*, 27(4), 623-639.
- Leonard, Robin. (2002, April). Statistics on vision impairment: A resource manual. Retrieved October 28, 2011, from <http://www.gesta.org/estudos/statistics0402.pdf>
- Samson, S. (2011). Best practices for serving students with disabilities. *Reference Services Review*, 39(2), 260-277.

Schneider, K. (2008). I love libraries, and I'm blind. *Library Journal*, 133(12). 43.

Tatomir, J., & Durrance, J.C. (2010). Overcoming the information gap: Measuring the accessibility of library databases to adaptive technology users. *Library Hi Tech*, 28(4), 577-594.

Vernon, R. (2010). Inexpensive accessibility options for your library. *Feliciter*, 3(56). 98-99.



Appendix A: Informed Consent form

INFORMED CONSENT FORM

Permission for Volunteers to Participate

In a Research Study

You are invited to participate in a research study investigating the opportunities and challenges experienced in an academic library for students with visual impairments. We need volunteers to participate in the study who are registered with the Disabled Student Services (DSS) office at Middle Tennessee State University (MTSU) and who utilize the services of the Adaptive Technology Center (ATC) located in Room 124 of the James E. Walker Library.

STUDY TITLE: Opportunities and Challenges for Visually Impaired Patrons in Academic Libraries

PRINCIPAL INVESTIGATOR: David Robertson

UWG DEPARTMENT: Department of Educational Innovation / COE

PHONE: 615-579-9778

EMAIL: drobert9@my.westga.edu

SUPERVISING UWG FACULTY (if PI is a UWG student): Dr. Danilo M. Baylen

DEPARTMENT: Department of Educational Innovation / COE

PHONE: 678-839-6130

EMAIL: dbaylen@westga.edu

Purpose of the study:

The purpose of this research study is to discover what opportunities and challenges face visually impaired patrons in an academic library setting.

Procedures to be followed:

The research will involve taking a survey (paper version), independently or with the help of a ATC student worker, participating in a brief interview, and optionally, to be observed while performing two (2) database searches using the adaptive technology of your choice.

Time and duration of the study:

The study will be conducted over a 2-week period between November 13-26, 2012. We estimate the time required to be 30-45 minutes for the survey and interview, and 15-minutes if you participate in the optional observation test.

Discomforts or risks

This study is anonymous and your name will not be collected. There are no known risks associated with this study.

Benefits of the study:

You might not receive any direct benefits from participating in the study, but the research will help us understand what is helping you be more successful as a visually impaired library user and what is hindering your progress.

Compensation:

There is no compensation for participation in this study except the value of adding to the general body of knowledge of improving user services for visually impaired students in academic libraries.

Privacy:

All information that you provide will be kept in strict confidence and there will be no way to trace the information you provide back to your identify so please be honest in your answers.

When the records, data, tapes, or other documentation will be destroyed (if applicable):

Data will be securely stored for three months, then destroyed (shredded).

Participation:

The researcher will give you an opportunity to share in open-ended questions what some of the opportunities you have received from library services and the ATC that have helped you be more successful in your degree program. Also, the researcher will ask open-ended questions as to what challenges you have or are currently facing.

Questions about the research study:

If you have questions about this research study or any research related problems, you may contact the researcher or faculty advisor listed above.

Questions about your rights as a research participant:

If you have any questions about this study or if you have any questions regarding your rights as a research participant, you can call the Institutional Review Board of the MTSU at 615-494-8918. You may also visit their web site at <http://www.mtsu.edu/irb/>.

Participant Agreement:

I have read, or have had read to me, the above study and have had an opportunity to ask questions, which have been answered to my satisfaction. I agree voluntarily to participate in the study as described.

Please sign both copies, keep one and return the other to the investigator.

_____	_____	_____
Date	Participant's Name	Printed Name
_____	_____	
Date	Signature of Researcher	
_____	_____	
Date	Signature of Witness	



Appendix B: Visual Impairment Services in the Library Survey

(Please note: Survey participants can take the test independently or be verbally coached through the survey by a student worker upon request.)

DEMOGRAPHIC INFORMATION

- Current age:
- Ethnicity:
- Type of community do you reside in (*circle one*): Rural / suburban / urban
- College grade level:
- Gender:
- Veteran information:

VISUAL IMPAIRMENT

(Check one)

Blind

Low vision

- List any specific eye disorder(s):

- Registered with Disabled Student Services (DSS)? Yes No
- Registered with Vocational Rehabilitation through the Department of Human Services for the State of Tennessee?
 Yes No
- Ever received a short-term adaptive technology loan? Yes No
- Currently under treatment or medication for visual impairment? Yes No

ADAPTIVE TECHNOLOGY

(Check all that apply)

Screen reader

Screen magnifier

Other (please list)

JAWS

Zoom Text

Kurzweil 3000

- Speech-to-text services
- Tactile graphics
- Enlarged print materials
- Other alternatives:

POST GRADUATION OPPORTUNTIES

How do you feel about your career opportunities post-graduation?

- Not confident
- Somewhat confident
- Confident
- Very confident



Appendix C: Student workers questionnaire (self-reporting)

1. What opportunities do you see that the ATC is providing visually impaired students in the library?

2. What hardware do you find most helpful for the visually impaired patron?

3. What software do you find most helpful for the visually impaired patron?

4. What challenges do you see that they face?

5. How would you recommend that the library overcome these challenges?



Appendix D: Target Population Interview questions

1. What opportunities have adaptive technology and/or user services in the library provided for you as a visually impaired person?
2. What have you found most helpful?
3. What challenges have adaptive technology and/or user services (or lack of) in the library provided for you as a visually impaired person?
4. What have you found most challenging?



Appendix E: Observation Test

Database search test

Instructions: Using your speech reader of choice (JAWS, Zoom Text, or Kurzweil 3000), attempt two academic searches using EBSCO full text, peer reviewed search and JSTOR – “students with visual impairments” – open the first article the search produces and try to access the full-text PDF using the assistive technology.

Upon completion, share your thoughts about the experience with the research team member observing you.

Time limit: 15 minutes