ASSISTIVE TECHNOLOGY IN SCHOOL LIBRARIES

by

Julie K. DeMarco

An Abstract
of a research paper submitted in partial fulfillment
of the requirements for the degree of
Master of Science in Library Science and Information Services
in the Department of Educational Leadership and Human Development
University of Central Missouri

August, 2014
ABSTRACT

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Julie K. DeMarco

Assistive technology in school libraries is important in the success of all users, including the student body, their families, and the faculty. School libraries meet the various needs of those who utilize its services, and librarians have the responsibility of assisting those users with the resources the library provides, especially its assistive technology. This review of the research focuses on what assistive technology in the library looks like and why it is important, what tools are available, and what librarians need to know in order to provide instruction for its proper use. The literature review also discusses the addition of Universal Design for Learning as instrumental to the use and implementation of assistive technology in the school library.
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APPROVED:

Advisor: Dr. Patricia Antrim

Committee Member: Dr. Jennifer Robins

ACCEPTED:

Chair, Department of Education Leadership and Human Development: Dr. Patricia Antrim

UNIVERSITY OF CENTRAL MISSOURI
WARRENSBURG, MISSOURI
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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHAPTER 1: INTRODUCTION</td>
<td>..................................................................................................................</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Statement of the Problem</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Purpose of the Study</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Research Questions</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Limitations of the Study</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Definition of Terms</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Research Design</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Conclusion</td>
<td>5</td>
</tr>
<tr>
<td>CHAPTER 2: REVIEW OF THE LITERATURE</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Introduction</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Defining Assistive Technology and its Importance</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Universal Design (UD)</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Assistive Technology Tools and Types</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Conclusion</td>
<td>19</td>
</tr>
<tr>
<td>CHAPTER 3: RESEARCH QUESTIONS</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Assistive Technology and the School Library</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>Assistive Technology Access for All Users</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>Assessing Assistive Technology in the School Library</td>
<td>23</td>
</tr>
<tr>
<td>WORKS CITED</td>
<td>25</td>
<td></td>
</tr>
</tbody>
</table>
CHAPTER 1
INTRODUCTION

Users of school libraries have varying degrees of learning needs and styles. Students utilize the library for educational responsibilities, teachers utilize the library in assisting students in meeting their responsibilities, and librarians have the responsibility of assisting both teacher and student in effectively using the library and technology services. Assistive technology is defined by the Individual with Disabilities Education Act (IDEA) as “any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve the functional capabilities of a child with a disability” (Hopkins, “School” 15). In order for a school library to effectively meet the needs of its users, assistive technologies need to be properly understood, selected, and implemented into the services the library provides.

Statement of the Problem

Many of the technology services of school libraries today only meet the basic needs of their users. School librarians don’t always know what assistive technologies are, what modifications or additions to current technology are available, or how to properly select and use the assistive technology acquired. Students with disabilities are less inclined to visit the library when they feel as though they do not have the needed access to resources that can assist them or feel as though their needs are not being properly met through the services being offered. In order to meet their mission of providing information access to all, librarians have the responsibility of looking at what assistive technologies will make resources more accessible to their users (Burke).
Purpose of the Study

The purpose of this study was to review the literature in order to find out what assistive technology is and what its role is in the school library. Literature was reviewed regarding the various types of assistive technologies available and how they are utilized in library services. The review also prompted the inclusion of what Universal Design for Learning is and how it is used in conjunction with assistive technology. In order to know how to effectively incorporate these services into the library, the literature was also reviewed to find out what the role of the school librarian is and what his or her needs and responsibilities are in relation to employing assistive technology in the library.

After an understanding of what the roles of assistive technology and school librarians are, the literature was then reviewed for types of assistive technology available, what is needed for its proper incorporation into school curriculum, and what the training and collaboration needs of the librarian and faculty are in relation to it. The results of this study demonstrate that assistive technology in the school library is necessary for the librarian to provide students with the lifelong learning skills necessary to become successful in their education.

Research Questions

School librarians have the responsibility of being both collaborator and leader in the services they provide to their users. Important in meeting those responsibilities, assistive technologies help librarians provide students the means to meet their educational responsibilities and teachers to assist their students with educational and learning needs. The following research questions guided the study:

1. How is assistive technology library-related and what is its importance?
2. What does universal design contribute to assistive technologies in the school library?

3. What does assistive technology look like in the school library?

**Limitations of the Study**

There were various limitations involved in the study of assistive technology and its importance in school libraries. One limitation included the given length of time for the review of literature, as well as the limited journals containing articles related to the topic. Since this study is based upon existing literature, it required the availability of peer-reviewed journals from those with professional expertise. Looking for articles regarding the general concept of assistive technology in school libraries also narrowed down the available options.

Another limitation of the study was that the search included only articles published in the last ten years in an attempt to find the most current articles. The concept of assistive technology is not a new one and seems to have gained attention more than a decade ago. With the datedness of articles, some of the assistive technology tools and resources originally referenced have become outdated, also limiting the currency of the study.
Definition of Terms

Assistive technology: “any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve the functional capabilities of a child with a disability” (Hopkins, “School” 15).

Universal design: modifications made to the physical environment, facilities and equipment to accommodate individuals with disabilities.

Universal design for learning: provides access points for all students to experience the curriculum and to help them overcome their individual learning barriers (Messinger-William and Marino 8).

Research Design

No research was conducted for this literature review. The study was descriptive in nature and focused on the pre-existing literature available. Guiding questions were used in determining the review and collection of existing literature and research articles pertaining to the topic of assistive technology in school libraries. Existing information and product details from current suppliers of assistive technology pertaining to their application in a library setting were also reviewed. Library websites, such as the Oregon School Library Information System, were visited in regards to their existing implementation of assistive technology adaptation on their websites. Also reviewed for their existing knowledge of assistive technology in school libraries were websites of leaders in the field of library science, such as the American Library Association (ALA) and the Library of Congress.

Articles were searched for and retrieved from the following databases, Education Research Complete, ERIC, and Library Literature & Information Science Full Text (H.W. Wilson).
Search terms included; assistive technology, school library, school libraries, universal design, and universal design for learning.

**Conclusion**

The school library plays a major role in the success of student education. With the inclusion of assistive technologies, librarians are equipped with the essential tools necessary to assist them in meeting their mission of providing information access to all users. This study includes three chapters that go in-depth into the area of assistive technology in the school library. The next chapter is a review of the literature. A definition of assistive technology is given and the literature provides reasoning as to its importance. The concepts of universal design and universal design for learning are then discussed, and the study also provides examples of their connections to assistive technology. Chapter two then concludes with a discussion of what types and tools of assistive technology are available for the school library. The review is then concluded in chapter three with answers to the research questions that guided the study.
CHAPTER 2
REVIEW OF THE LITERATURE

Introduction

When school librarians know what assistive technology (AT) is needed for the school library, where to look for assistance and training, and how different technology resources are used for different information needs, they are prepared to serve all students. The first section of this paper describes assistive technology and its importance. Assistive technology in schools is even more successful when coupled with the additional implementation of universal design (UD). The second section addresses this. The final section provides an analysis of tools to consider for AT, key components of AT implementation, and some AT examples.

Defining Assistive Technology and its Importance

Many school librarians are aware that traditional library collections might not be sufficient in meeting all the needs of a school’s student body. Assistive or adaptive technologies promote lifelong learning skills all students need in order to be successful in their education. Knowing and assessing what assistive technology is, what the individual needs and resource requirements are for students, as well as how to acquire training and assistance for AT implementation are all factors to be considered.

Assistive technology, as defined by the Individuals with Disabilities Education Act (IDEA), is “any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve the functional capabilities of a child with a disability” (Hopkins, “School” 15).

When visualizing a school library, the usual picture includes a librarian, maybe an assistant, the circulation desk, and the traditional resources: books, magazines, and computers.
With assistive technology in the library, librarians can provide more for students with disabilities, including technical strategies, assistive devices, and a functional environment which allows these students to overcome their particular area(s) of challenge. The benefits of assistive technology in the school library encompass many areas. Students with disabilities exposed to AT have greater, barrier-free access to information, better development and achievement of their goals, competency and efficiency in their work, increased self-esteem, and self-reliance. Librarians can assist these students by becoming specialists in the assistive technologies they provide in their media centers. They encourage and provide students with peace of mind in using AT and help the students see that peer acceptance is a benefit of utilizing the assistive technology available to them. The result of AT integration is the provision of lifelong learning tools to help students become successful in life beyond the classroom or library walls.

While assistive technology may take many forms in the school library, not all technology constitutes AT. Assistive technology in the library is not comprised merely of reference tools and instructional technology. The purpose of AT is for the provision of student-selected instruction and information (Hopkins “Assistive Technology” 46). When determining whether an item is a traditional resource or applicable as assistive technology, questions addressed include: “What does the item do to enable individual student success beyond the classroom, and does it provide students the ability to function with an assistive tool that is geared toward the student’s particular modification or customization needs?”

In order to know what form of modification or customization is needed for the student user of the library, assessments are considered. Assessment of the abilities, comfort levels, and preferences of the student help determine which assistive technology resources to consider.
Not only will the students appreciate this, but teachers and parents also involved in the implementation and use of the AT will benefit from having access to the assessment outcome.

The demographics of student users of AT vary; many are traditional students, who may not be the target audience of any particular AT, but who would also benefit due to undetected learning disabilities. Other students may be transitioning from homeschooling and may have resources they have used there that would also be beneficial for use in the school library. The families of those needing the modification or assistance are also benefactors of the technology. Guder points out that an understanding of the community a library serves, not just limiting that understanding to the student body itself, will help build insight into the needs and preferences of all users in order to meet their needs adequately (21).

There are multiple ways of assessing the users of potential assistive technology tools in school libraries. The first path to take is partnering with the special education teachers and the parents. Another path is to execute assessment surveys in order to know what needs or disabilities are present in the student body. Other tools are also available, or can be provided, that are beneficial to those assessing for AT needs. The American Library Association (ALA)’s Association of Specialized and Cooperative Library Agencies (ASCLA) is one resource to be referenced. They have developed a toolkit of etiquette tip sheets that can help librarians identify behaviors of those students with specific disabilities, as well as identification of which AT tools and materials would be most beneficial (Mates 40). When a library user understands that someone is trying to help them, he or she is more likely to respond positively to future implementation of an assistive tool or resource.
School librarians can seek out and discover the vast majority of accessibility options available for their school library collection. Many libraries do not have the appropriate resources to offer the assistive technologies needed for their students. Looking to outside resources is a viable option, and striving to build partnerships with suppliers is an added benefit for all involved. Collaborating with other school librarians is essential in finding out what resources they recommend, currently use, or are willing to outsource. Looking to public libraries is another possibility. School librarians can see what programs are offered by their local public library and if they have any resources they would be willing to or have available for check-out. Some public libraries have developed an Adaptive Services Division (ASD), like the District of Columbia Public Library (DCPL) offers to their community. DCPL’s ASD provides services for both adults and children, such as free access to inclusive reading formats, a Braille Book Club for Kids, an after-school program for blind and low-vision teens, homework help, and much more (Poole 6). While not all public libraries will offer the same extensive programs, any assistance they can provide in collaboration with the school library is beneficial.

It is not enough for school librarians to only offer students the opportunity to have access to assistive technology in the school library; training in how to use it properly is also advised. For librarians to accurately instruct students in the proper and most beneficial ways of using the AT, a clear understanding of how to use the available resources is required. Even though not every teacher, or even every school librarian, will be able to receive training, it is beneficial for all library staff to have a general knowledge of the AT available in the library. If training is an issue, a list of what assistive technology is available and knowledge of where
teachers or assistants can access it along with a brief or basic instruction on how to use the tools is helpful.

Myhill et al. discuss the results of a study done by Project ENABLE (Expanding Nondiscriminatory Access by Librarians Everywhere), which “applies the social model of disability to help [school] librarians… further develop their skills and resources to create an inclusive environment for all students” (202). Myhill et al. found that school librarians might lack training and knowledge of assistive technology. The study determined that “offering ...training to practicing [librarians] can have a major impact on the quality of library and information services, programmes [sic], and resources and facilities available to pre-K-12 students with disabilities” (213). Just providing access to the technology is not enough; training and proper use is valuable for all involved.

Training in the use and implementation of assistive technology is best done in collaborating with other teachers in the school library. Because time constraints are one of the key issues when it comes to this matter, collaboration is vital to active input, communication, and feedback. School librarians can take a leadership role when discussing AT with other teachers and administration during lunch breaks, staff meetings, or through email. Other options include providing website links to quick tutorials, online graphic organizers, and organizational tools such as schedules and calendars. Librarians can use the library’s webpage to discuss what is offered in the library (Winter 38). Creating positive relationships with other teachers and administration will create opportunities for greater collaboration in both general library services and assistive technology implementation.
Universal Design (UD)

Other factors related to assistive technology in school libraries include looking at underlying considerations which impact decision making in regards to AT implementation. One of the more important considerations is Universal Design for Learning (UDL), which is discussed in the next paragraph. Other factors discussed in this section enhance the educational opportunities for students who possess individual learning barriers and learning disabilities.

Because universal design can be difficult to comprehend without explanation, consider the following figurative visual example: universal design is like a sloped curb cut in a sidewalk installed for those in wheelchairs – all users have access to the sidewalk because of this design. Universal design applies to the facilities and equipment in the educational setting. Universal design examples include looking at the dimensions of doorways and width between collection stacks in the library that allow users with walkers and in wheelchairs to navigate the spaces. If automatic door entrances are not an option, prop open the door for easier access into the school library (“Low-cost/No-Cost”). Widen stacks in order to accommodate clearance and access to the collection. Lower shelves provide easier access to materials from a seated position (“Low-cost/No-Cost”).

Universal Design for Learning (UDL) provides access points for all students to experience the curriculum and to help them overcome their individual learning barriers (Messinger-William and Marino 8). UDL is beneficial for all students, teachers, and administrators who have needed access to the instruction required for success in education when it comes to curriculum. Students are able to gain improved access to curriculum resources through the use of assistive technologies and UDL.
Universal design affects the facilities and equipment aspects of assistive technology. UD considerations include the physical environment: ramps, signage, lighting, bookshelves, equipment, and the size and shape of books. Examples of assistive technology hardware from a universal design perspective include screen enlargers or magnifiers that can either be directly installed onto a computer monitor which then magnifies the screen, such as Learning, Sight & Sound’s Computer Screen Enlarger for 14-17” Screens (“Computer”), or separate equipment placed in a designated location that allows users to place documents or objects on an XY-table and which are then magnified on a monitor, such as the VISIO 22/22+ by Baum (VISIO 22).

The combination of universal design and assistive technology provide users with additional ways of attaining the information they seek or the content they are being taught. Consideration of how telecommunication devices are used, as well as the consideration of accessories to technology such as a camera or mouse, the concept of universal design for learning provides multiple ways of attaining, engaging, and expressing ideas and information. These are the three main principles of UDL: representation, engagement, and expression (Blue and Pace 51). Representation includes differentiated instructional delivery; teaching in visual, auditory, and graphic modes. Engagement options allow students to be involved with the content and their peers in multiple, non-traditional settings. Expression allows students varied ways in delivering their knowledge of the content; turning in a poster instead of a report for example, or giving a verbal presentation.

Universal design is the concept of providing an accessible area in the physical environment; however, this concept can be applied to the virtual environment as well. Providing access to users in the virtual space consists of the library programs and websites
available, not to mention the digital presentations provided for access to instructions or step-by-step directions (such as screencasts). Librarians look to the current systems in place to see how they can be modified in order to provide an enhanced user experience. “Libraries, as community space in the real and virtual world, can lead the charge for incorporating universal design in computer access and website creation” (Szuwalski, 18).

Whatever is utilized in the school library needs to be both safe and accessible to all needing or wanting independent access. Universal design for learning provides a flexible framework to incorporate technology, meet the various learning needs, and provide learning opportunities for all students. The types of assistive technology selected for implementation and the universal design (UD) of the school library can be enhanced with the principles of UDL to provide the greatest benefits possible to the students. Implementing both UD and UDL goes beyond just providing students with access to library resources, it also enhances their experience and success in education.

AASL’s Standards for the 21st-Century Learner state that “all children deserve equitable access to books and reading, to information, and to information technology in an environment that is safe and conducive to learning” (AASL 1). Assistive technology, Universal design, and Universal Design for Learning, used together play an integral part in librarians meeting the requirements of these standards (Gavigan and Kurtts, 54). The goal as a school librarian is to make sure students have access by implementing possible accommodations in regards to facilities and equipment, as well as the supporting multifaceted instruction provided by UDL.

Inclusion and differentiation, in terms of AT and UDL, look different when applied in the library setting to individual students and their needs or disabilities. Assessment and
communication with individual students are key parts of knowing which resources to acquire and which lessons or curriculum to modify in order to support student learning. Offering more than just traditional library services requires a rethinking of methods and services in order to meet the needs of all users. Cummings lists AT options for UDL in the form of software, such as Kidspiration, which helps children visualize, organize, and communicate their writing ideas.

When looking to the needs of deaf or hard-of-hearing students, for example, Eisner provides suggestions on what to consider: distribute a user needs survey, offer these students first choice in where to sit for a presentation, look at whether the lighting is sufficient, introduce lessons in a small space and then let the students move around, make sure signage is visual and easy to see, consider captions and subtitles, and encourage the versatility offered by e-readers (36, 41-59). Eisner also provides a list of “dos and don’ts,” many of which can be applicable to all users of the library, not just those with visual or hearing limitations (51-55). “Do” examples include rephrasing a question or answer, making sure you have the student’s attention, and using short, simpler sentences. Things not to do include not covering your mouth when speaking, shouting at a student, or otherwise embarrassing a student.

School librarians have the opportunity to become familiar with the curriculum of all content areas and to suggest ways of enhancing it with assistive technology and UDL integration. Knowing the instructional technology options, curriculum selections, and knowledge of the resources already in place in the library are all ways school librarians can be instrumental in suggesting, teaching, assisting, and implementing the tools that will enhance that curriculum. Reisberg states that “technology can enhance the academic and social success of the students as well as provide a link between the information taught by the teacher and the
expected academic and social behaviors the student is expected to perform (Kurtts, Dobbins, and Takemae 23). Making the necessary connections between curriculums, state and national standards, and the *Standards for the 21st-Century Learner* with the use of assistive technology and UDL is integral to its implementation across instruction.

In becoming certified to be a school librarian in a primary or secondary school setting, librarians are taught many ways of using and implementing technology, namely in the online world of the Internet. This instruction makes them leaders in the implementation and promotion of both traditional technology and assistive technology in schools. Librarians are taught to be advocates of the 21st-Century Literacies: digital, visual, textual, and technological. They know strategies to differentiate between the learning needs of students. They can offer various services both within and outside the library walls, as well as knowing what to look for when selecting and ensuring equitable access when integrating assistive technologies and UDL in order to enrich the curriculum. School librarians are taught many different roles, roles that are intertwined and which enhance their expertise in the field. In their research of AT and its association with autism, Ennis-Cole and Smith found that school librarians have foundational knowledge of AT, they take care planning and matching the selection of available AT to students, assume leadership roles in training others on the AT, and above all, are advocates of AT in helping to make teachers, students, and the community aware of the available AT resources (95).

**Assistive Technology Tools and Types**

Implementing assistive technology and having more than just the traditional resources in a school library will provide equitable library access to all users and enhance their
educational success. In addition to the previously mentioned factors to consider when adding AT to a learning environment, a bevy of factors are specific to the school library. One factor to look at is what the assistive technology provides both within and beyond the library. Other factors include looking at what the abilities, preferences, and comfort levels of the students are who will be most affected by the AT. In order to answer these questions, librarians can distribute and review needs assessment surveys. Once these factors are researched, and information gathered, decisions on which AT products to acquire can focus on hardware tools, software programs, or a combination of both. Another factor is the consideration of Internet specifications that need to be looked at and adhered to in order to promote both use and success. School librarians also look at how the newly acquired, or even current AT in the library will be advertised, and at what training will need to be provided to both library staff and the students. Decisions made for all of these factors will help determine implementation of assistive technology in the library.

Assistive technologies are typically those that are considered “additions” to a situation or environment. Adaptive technologies are AT aids that adapt a resource in the school library to make it more usable. Many adaptive technologies can be added to resources that are currently in the environment, such as a computer or, in its more basic form, books on tape or CD. Adaptive technology products make both computer and non-computer resources easier to use and thus add to the library services available to all students. In his article, “Assistive-Adaptive Technologies,” John Burke talks about the importance of incorporating these assistive, or adaptive, technologies into the library so that librarians can meet their mission of providing information access to all users (45).
When school librarians consider technology options to be added to the library, they are evaluated in order to know if they are meeting the individual needs of the students. Copeland identifies a list of “Helpful Hints” to consider when evaluating AT, including goals, interests, distractions, availability, and assistance required (66). He suggests using follow-up questions to review the AT. Did it benefit the process? What worked well or needs to be done differently? He invites comments or suggestions for future use. AT needs to be functional in the environment and help students with their educational success, not hinder them.

Evaluation of virtual assistive technology resources also applies to the sources available to users that are accessed by way of the Internet, such as the school library’s website. Librarians can look to The World Wide Web Consortium (W3C)’s Web Content Accessibility Guidelines (WCAG) (www.w3.org/WAI/WCAG20/glance/) for assistance with virtual AT. These guidelines and tools help to clean up websites so they are user-friendly, while also focusing on standards that need to be met when considering access to all, including users with disabilities and users from older generations (Edwards-Johnson 23).

One school library that has looked at these guidelines in the development of their website is the Oregon School Library Information System (www.oslis.org). Their “How to Do Research” links provide users the opportunity to change text size and use access keys – things suggested by WCAG (Blue and Pace, 53). This is an example of accessibility in the virtual environment.

Libraries today are becoming more and more technologically advanced by way of digital devices such as iPads, Kindles, and tablets. All of these typically provide access to the Internet and websites in order to download eBooks. They also have assistive applications available.
Devices that are already at the disposal of library users might have many functions that can be modified to individual student needs. For example, some have settings for brightness, font size, and a built-in dictionary feature. Web based AT are often adjusted using the computer settings in the browser menu. The Windows operating system magnifier or the system narrator can be turned on. These are available from the control panel in the Windows “Ease of Access Center” settings. The accessibility features for Apple users can be accessed by using the “Universal Access” settings in System Preferences (IOS). Zoom or text size features are found on the office productivity programs currently installed on school computers, such as PowerPoint (Harris).

Identifying what AT is currently available in the library and finding creative ways of using them for modification and assistive use to library users is a way of avoiding spending additional funds from an already minimal library budget.

A popular technology in school libraries that can serve as AT are eBook sites. Used in conjunction with handheld devices, such as an iPad or Kindle, these sites are essential AT tools for school library users. Students who read at different levels can find access to materials geared toward their individual preference and skills. Some sites have UDL functions that assist students in taking notes. Some include online comprehension quizzes. Teachers can utilize these sites to modify lesson plans and provide students with differentiated activities. One special education teacher uses the digital book site, Bookshare, to provide his students with access to an enhanced reading experience, increase their reading confidence and independence, as well as saving them time when searching for comparable reading materials (Chernek). Bookshare offers an online library of digital books for people with visual impairments, physical disabilities, and learning disabilities ("How Bookshare Works").
Wopperer lists online literacy resources, such as the National Library Service for the Blind and Physically Handicapped, which offers materials in audio and Braille formats compatible with assistive technologies ("That All May Read...").

Using Universal Design for Learning to frame their research and development, the nonprofit organization Center for Applied Special Technology (CAST) finds ways of using technology to enhance education for students with disabilities. For over 25 years, CAST has worked to improve the methods and materials educators utilize in providing AT and UDL to students ("CAST"). One of their free web-based tools, established in 2006, is the UDL Book Builder. It offers diverse learners the opportunity to “create, share, publish, and read digital books that engage and support... their individual needs, interests, and skills” ("Welcome"). In 2011, CAST’s UDL Book Builder web site was released in Spanish, creating even greater learning opportunities for students with disabilities ("CAST").

**Conclusion**

There is a plethora of options available when considering assistive technology implementation for the school library; some are high-cost options, and others are low-cost or no-cost options. Low-cost or no-cost options for Universal Design for Learning include looking at available online programs or eBook sites, for example. Computers already available for student use in the school library can have settings changed for vision impairment disabilities through Microsoft’s “Ease of Access Center” ("Guides”) and Apple’s “Universal Access” menu. W3C provides tools and guidelines to assist with online tools and learning needs. No matter the type of AT that is acquired in order to help students be as successful as possible in their education, assistive technologies and universal design for learning are needed in order to
provide “all children... equitable access to books and reading, to information, and to information technology in an environment that is safe and conducive to learning” (AASL 1).
CHAPTER 3
RESEARCH QUESTIONS

An important aspect of the school library in meeting the needs of the school’s student body is assistive technologies. School librarians have the responsibility of becoming both collaborator and leader in assisting students and teachers using library and technology services. Student users have varying educational responsibilities and learning styles. Teachers assist their students in meeting their educational and learning needs. The research reviewed when examining the importance of assistive technology in school libraries prompted the following questions: How is assistive technology library-related and what is its importance? What does universal design contribute to assistive technologies in the school library? What does assistive technology look like in the school library?

Assistive Technology and the School Library

Considerations of assistive technology (AT) in the school library are comprised of what it is and what it does to benefit users. Defined by the Individuals with Disabilities Education Act (IDEA), assistive technology is “any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve the functional capabilities of a child with a disability” (Hopkins, “School” 15). When provided in the school library, assistive technologies benefit many users. By becoming specialists in the assistive technologies available in their libraries, school librarians provide students with the lifelong learning skills necessary to become successful in their education.

Assessments of student demographics and user abilities and needs help to determine which assistive technologies will be most beneficial in the school library. By not limiting assessments to the student body itself, giving teachers and parents access to available AT will
be a benefit when the library has an understanding of the community it serves (Guder).

Librarians can assess potential users of assistive technology when they partner with other teachers, specialists, and parents. Tip sheets can also assist in identifying which AT tools and materials would be most beneficial (Mates 40).

Merely providing access to assistive technology in the school library is not enough. Librarians require training in order to also provide instruction for its proper use. Training has a major impact when providing quality services and instruction to pre-K-12 students with disabilities (Myhill et al.). School librarians become leaders and create positive relationships when implementing training sessions for teacher and administrative users of the AT available in the library.

**Assistive Technology Access for All Users**

Assistive technology provides access to all users through the concept and contribution of Universal Design (UD). Universal design applies to the physical environment of the educational setting, such as ramps, signage, and bookshelves in the library. When school librarians implement necessary accommodations in their library regarding the facilities and equipment, they meet the requirements of AASL’s *Standards for the 21st-Century Learner*: “All children deserve equitable access to books and reading, to information, and to information technology in an environment that is safe and conducive to learning” (AASL 1).

Also meeting the AASL Standards is the concept of Universal Design for Learning (UDL). UDL creates access points to the curriculum that educators teach to their students, providing multiple opportunities to attain, engage, and express their ideas and knowledge of content. Teachers are able to create multifaceted instruction that meets the various inclusion and
differentiation needs of their students through the implementation of assistive technology and universal design. By having knowledge of course curriculum and assistive technology in their school, librarians play an instrumental role in knowing which services and tools to select and integrate into the learning environment, ensuring equitable access to all students.

**Assessing Assistive Technology in the School Library**

Librarians and student body users need to know what assistive technology looks like in the school library. Assessment of what is currently available, what can be modified, and what can be added is beneficial to all users. Many libraries have computers that have adjustable settings already included, or can have hardware added to them so they are more accessible. Magnification or narration features can be turned on, or screen enlargers can be provided for ease of reading monitors. Reading software can be installed, and office productivity programs, such as PowerPoint, can be utilized for all learning needs.

Today’s libraries have digital devices such as iPads, Kindles, and tablets available to their users. These devices typically have features that can be turned on or settings adjusted to meet user needs, such as brightness or font size. Many also have Internet-capable functions, allowing libraries and users to connect to eBook sites. eBook sites are essential AT tools for students who read at different levels, like to take quizzes online, and gain access to differentiated activities.

In order to know which options to choose, whether modifying current technologies available in the library or acquiring new technology, a review of the previously compiled needs assessments or surveys will help. Assessing the AT and making sure it will assist in meeting the needs of the student body applies to any additions or modifications made to available
technology. Librarians look at what assistive technologies will make resources more accessible to their users in order to meet their mission of providing information access to all (Burke).
WORKS CITED


