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College and University Accessibility for Students With Visual Disabilities

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

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Walden University
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Abstract

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by

Robbie S. Huff

MEd, Mercer University, 2005

BS, Morris Brown College, 2000

Project Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Education

Walden University

October 2021

Abstract

The problem addressed by this project study was the lack of understanding by faculty and administrators of accommodations affecting the academic environment in higher education required for success by Georgia students with visual disabilities. The purpose of this qualitative descriptive study was to explore how Georgia students with visual disabilities describe their experiences in higher education. Guided by the framework of the social model of disability by Oliver, which holds that people with a disability are restricted by the barriers in their community and not by the disability; the research question was used to explore of how Georgia students with visual disabilities described their higher education experiences. The 10 participants in this qualitative descriptive study were students or 1st-year alumni students with visual disabilities from two postsecondary institutions in Georgia. The participants, five from each school, responded to the same set of interview questions. Following a content analysis of the data, three findings emerged: (a) Participants recommended better training for faculty in dealing with students with visual disabilities, (b) Participants emphasized repeatedly the right of every student to access an education, and (c) Participants indicated that they expect more from their local Office of Disability Services. Positive social change implications of the findings include: (a) more training of faculty in dealing with students with visual disabilities, (b) emphasis on the right of every student to access education, (c) more support from the Office of Disability Services, and (d) further research into the needs of individual students with visual disabilities. The results also informed the creation of a professional development training for college faculty and administrators.

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Dedication

I dedicate this project study to my grandmother, Ms. Cleo P. Cutts, and my mother, Ms. Shirley Cutts Huff. These beloved and treasured educators taught me to believe in myself and that education is the key to success.

Acknowledgments

I would like to acknowledge some wonderful individuals who have supported me tremendously in my educational endeavors. I am grateful for my dad, Robert L. Huff; my sister, Shirkia L. Huff; and my friend Kenneth Mitchell for their comfort and encouragement. Thank you to Daniel Chrismer and to my editor Dr. Norma J. Turner.

Thank you to my first and second committee chairs, Dr. Michelle R. McCraney and Dr. Edward Kim. Many thanks to university researcher Dr. Steve P. Wells. I appreciate all of you for your mentorship and guidance through this challenging experience.

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Section 1: The Problem

The Local Problem

The number of people aged 16 to 75 in the United States living with a visual disability in 2016, including all genders and of all races and ethnicities and educational levels, was 7,675,600 people, or 2.4% of the total U.S. population (Erickson et al., 2017). This total excludes institutionalized persons. The same report showed that the number of such individuals living in the state of Georgia in 2016 involved 267,100 individuals (Erickson et al., 2017). The 2018 National Health Interview Survey (NHIS) revealed that 32.2 million adults in the United States, or 13% of the adult population, have difficulty seeing, even with assistive devices like glasses and contact lenses (American Foundation for the Blind, 2020, para. 3). Meanwhile, as of 2015, 1.02 million Americans were blind, according to the Centers for Disease Control and Prevention (CDC; 2020, para. 1). Many of these Americans with visual disabilities hope to earn college degrees, but they face barriers that those without visual disabilities do not face.

Following changes to Section 504 of The Rehabilitation Act of 1973, which legalized the rights of individuals with disabilities, more educators in postsecondary institutions are aware of the necessity of supporting students with visual disabilities (Gonzalez, 2020). Such students must achieve the same standards at the same level of rigor as students without disabilities to earn their degrees. Higher education administrators have a legal responsibility and a moral responsibility to offer academic programs so that students with visual disabilities can achieve success (Gonzalez, 2020).

As a student with a visual disability, I have encountered firsthand the disparity in treatment of and preparation for the success of students with disabilities. This study reflects an interest in attention paid to students with visual disabilities.

The problem addressed by this project study was the lack of understanding by faculty and administrators of accommodations required by students with visual disabilities to succeed in higher education. Individual titles within Section 504, particularly Title 2, indicated how researchers ought to define educational standards over time. Section 504 does not include a comprehensive list of standards enacted on a federal level. As a result, standards among states vary widely, implying that a high level of local interpretation is involved in determining which standards to implement (Gonzalez, 2020). Even local municipal superintendents and principals of K-12 school districts may vary tremendously in how they choose to articulate and implement standards to meet the needs of students with disabilities (Workman, 2016).

This study involved a qualitative approach to exploration of the social model of disability. The challenge was to discover whether and how the academic needs of postsecondary students with visual disabilities were being addressed in two institutions of higher learning in Georgia (Gonzalez, 2020). Finding that necessary services were lacking, including understanding of the challenges of students with visual disabilities, preparing a professional development program to address these gaps seemed feasible.

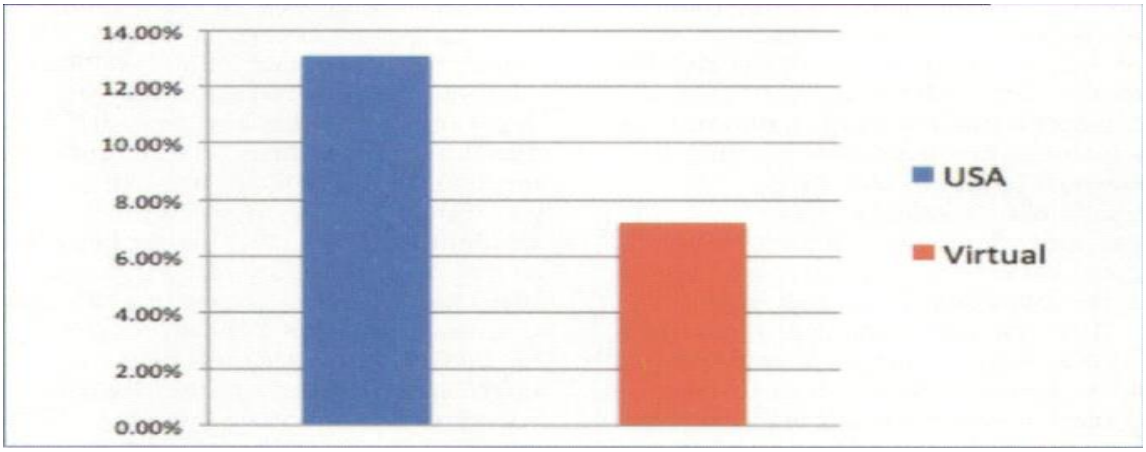
The students sampled were enrolled in two postsecondary institutions. The first is a four-year public university regarded as one of the most highly innovative in the nation

with 250 majors and minors, offering one of the most extensive lists of fields of study in Georgia (Gonzalez, 2020). The second is a 2-year community college with limited 4-year degree program offerings. Because the participants in the study attended classes both on campus and online, the results reflected the increased diversity in postsecondary instructional formats in the United States. For students with a visual disability or for faculty who teach classes including a student with a visual disability, the facilitation of the teaching and learning process remained an issue for discussion. The problem addressed by this project study was the lack of understanding by faculty and administrators of accommodations required by students with visual disabilities to succeed in higher education.

Using data from a 10-year-long longitudinal study, Schuck (2015) investigated the likelihood of students with visual disabilities enrolling in a postsecondary institution. The results were based on four factors: academic achievement, independence, social skills, and nonacademic skills. With these four factors, Schuck developed a logistic regression model to predict a rate of 80.6% of high school graduates with visual disabilities enrolling in postsecondary education. Figure 1 displays the number of students with any disabilities in United States colleges.

Figure 1

Classified Students With Disabilities in USA Colleges



This descriptive study consisted of written responses with a sample from the target population of students with visual disabilities enrolled in higher education in the U.S. state of Georgia. These students were enrolled in two postsecondary institutions. The first is a 4-year public university regarded as one of the most highly innovative in the nation with 250 majors and minors, offering one of the most extensive lists of fields of study in Georgia. The second is a 2-year community college with limited 4-year degree program offerings. The purpose was to explore how Georgia students with visual disabilities describe their higher education experiences.

Rationale

The problem addressed by this project study was the lack of understanding by faculty and administrators of accommodations required by students with visual disabilities to succeed in higher education. Individual titles within Section 504, particularly Title 2, indicated how researchers ought to define educational standards over time. Section 504 does not include a comprehensive list of standards enacted on a federal level. As a result, standards among states vary widely, implying that a high level of local

interpretation is involved in determining which standards to implement (Gonzalez, 2020). Even local municipal superintendents and principals of K-12 school districts may vary tremendously in how they choose to articulate and implement standards to meet the needs of students with disabilities (Workman, 2016).

Students with visual disabilities can succeed academically as well as other students if given the right tools to mitigate the visual disability (Fichten et al., 2020). As a student with a visual disability, I have encountered barriers in postsecondary education and wanted to explore whether others have faced the same challenges. The research revealed that, in fact, others faced the same gap in the provision of needed resources to college students with visual disabilities.

The World Health Organization (WHO; 2020a) identified a visual disability as an umbrella concept. The organization's definition includes total blindness and all other degrees of visual loss, ranging from mild and moderate to severe visual loss. According to the WHO, individuals with visual disabilities are classified according to the extent to which they use visual means of perception and learning compared to auditory or tactile means. The WHO (2020b, Overview, para. 2) proposed that age-related macular degeneration was the primary cause of visual disability among adults living in the United States. Other prevalent causes include diabetic retinopathy and glaucoma.

With the rise in students with visual disabilities enrolling in postsecondary institutions, faculty need to be more aware than ever of the needs of such students. The standard curriculum does not include the teaching of Braille, cane travel, or developing

positive attitudes towards visual disabilities. The same is true for most collegiate professors who do not necessarily have formal training in pedagogy at any level and may or may not have a student with a disability in a class longer than a semester (Correa-Torres et al., 2018; Taylor, 2016). In the college classroom, many college professors do not understand the challenges of their students with visual disabilities (Correa-Torres et al., 2018; Taylor, 2016).

Based on 2017 data from the U.S. Census Bureau, 628,900 people in the United States live with visual disabilities. Of these, approximately 75,000 were students enrolled in colleges within the country (Erickson et al., 2017; see Figure 1). Most students with visual disabilities can achieve success in academics (Fichten et al., 2020). Because they can achieve, these students would benefit from learning resources to optimize their achievement. Resources may include pictures and worksheets, Braille codes, large-print books, sensory tables, and innovative voice recognition systems (Iowa Department for the Blind, n.d.; Trief, 2017).

This study involved a qualitative approach to exploration of the social model of disability. The challenge was to discover whether and how the academic needs of postsecondary students with visual disabilities were being addressed in two institutions of higher learning in Georgia (Gonzalez, 2020). Finding that necessary services were lacking, including understanding of the challenges of students with visual disabilities, preparing a professional development program to address these gaps seemed feasible.

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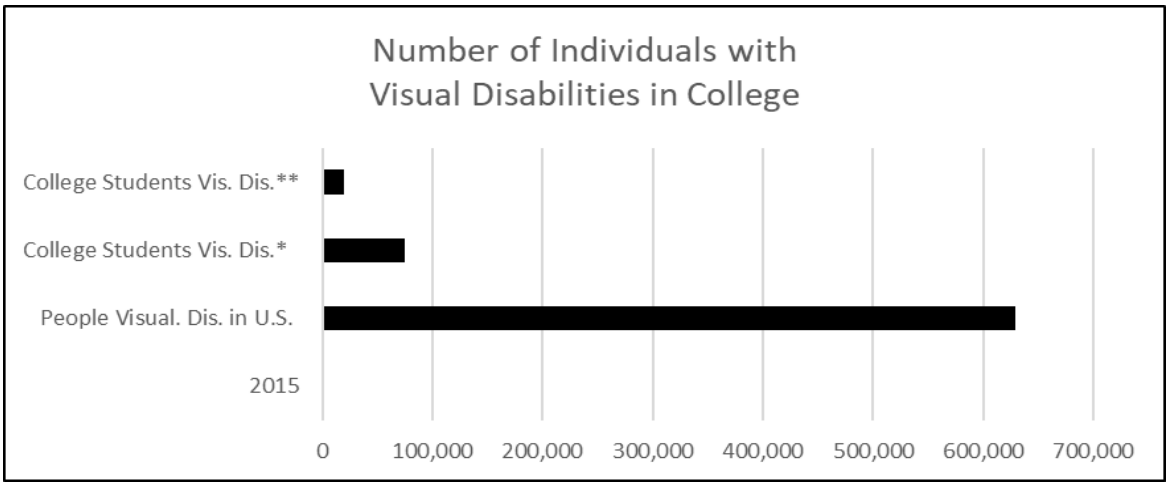
Definition of Terms

Adaptive technology: An object or system designed to improve the lives and capabilities of people with disabilities (HIE Help Center, 2020). Although the term *assistive technology* may be used more frequently regarding people with disabilities in general, *adaptive technology* is more often used to describe technologies designed for people with visual disabilities.

Disability: There are two definitions for this term. The first one conforms to the medical model of disability by which the problem rests in the person, most suitably treated by a medical doctor (Rembis et al., 2018). The second one is based on the social model of disability: a disability is a condition by which the problem rests in the accessories associated with the disability, not with the person (Rembis et al., 2018).

Figure 2

College Students with Visual Disabilities from the Total Number of Individuals with Visual Disabilities



* Number of individuals with visual disabilities in college. Adapted from *School Enrollment in the United States: October 2015—Detailed Tables*, by U.S. Census Bureau, 2017 (https://www.disabled-world.com/disability/education/ postsecondary). In the public domain.
**Adapted from "Disability and Employment Status Report for the United States" by W. Erickson, C. Lee, & S. von Schrader, 2017, Yang-Tan Institute (YTI), Cornell University (http://www.disabilitystatistics.org).

The Office for Civil Rights: The Office for Civil Rights (OCR, 2020, Interrelationship of IDEA and Section 504, para. 1) ensures that Title II of the Americans with Disabilities Act (ADA) of 1990 is followed. Title II expands the ban on discrimination to all state and local government services, activities, and schools, whether they collect federal assistance (OCR, 2020, Interrelationship of IDEA and Section 504, para. 1).

Reasonable accommodation: The term *reasonable accommodation*, which in Section 504 refers to the modifications employers must make for employees with

disabilities, refers to “academic adjustments, reasonable modifications, and auxiliary aids and services in the postsecondary school context” (OCR, 2020, Terminology, para. 5).

Reasonable modification: Under Title III of the ADA, “public entities are required to make reasonable modifications in policies, practices, or procedures when the modifications are necessary to avoid discrimination on the basis of disability, unless the public entity can demonstrate that making the modifications would fundamentally alter the nature of the service, program, or activity.” The OCR (2020, Terminology, para. 6), a component of the U.S. Department of Education, included this language in Section 504 of the Rehabilitation Act of 1973 (OCR, 2020, Interrelationship of IDEA and Section 504, para. 1).

Section 504 of the Rehabilitation Act of 1973: Section 504 of the Rehabilitation Act of 1973 is an amended rights statute that prohibits discrimination against Americans with disabilities. Section 504 includes the following language:

> No otherwise qualified individual with a disability in the United States . . . shall, solely by reason of her or his disability, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance. (OCR, 2020, Introduction, para. 2)

Visual disability: According to the WHO (2020), visual disability can be considered an umbrella concept that includes total blindness and all other degrees of visual loss, including mild, moderate, and severe loss of vision.

Significance of the Study

The needs of individuals with visual disabilities are as diverse as the severity of the disabilities themselves, which range from congenital to adventitious forms of visual disability (WHO, 2020, Overview, para. 2). The results of this study may provide insights for postsecondary leaders, faculty, and administrators concerned with current issues surrounding disability services. With an increased number of students with visual disabilities enrolling in U.S. postsecondary education, educational leaders will find the information in this study helpful in supporting the academic needs of students with visual disabilities (Gonzalez, 2020).

Meeting those needs requires sensitivity and understanding of differences on the part of faculty. Professors have encountered many challenges in teaching students with disabilities since Section 504 of the Rehabilitation Act (Kutscher & Tuckwiller, 2019). The WHO (2020, Overview, para. 2) also state that an adequate environment should be developed so that people with visual disability can learn appropriately.

In this study, the experience of postsecondary students with visual disabilities was examined (Kutscher & Tuckwiller, 2019). Participants revealed how their lives as students could have been made less frustrating or more enjoyable. The intent for this research was to become a resource for governments, administrators, and educators who in their efforts to accommodate students with visual disabilities seeking equal opportunity in postsecondary education. The results of this research may both reinforce the importance of existing resources and strategies and suggest new ones. Specifically, the results of this study may be useful in helping educational leaders to develop training for faculty and

administrators in higher education, thereby supporting students with visual disabilities in achieving their academic goals. In doing so, the study may promote social change. Educators have long been a force for social change by changing traditional practices to address society (Kutscher & Tuckwiller, 2019).

Research Question

The problem discussed in this project study was the lack of understanding by faculty and administrators of accommodations required by students with visual disabilities to succeed in higher education. The purpose was to explore how Georgia students with visual disabilities describe their higher education experiences. The research question (RQ) that guided this study is:

> RQ 1: How do Georgia students with visual disabilities describe their academic experiences in higher education?

The goal was to learn their concerns, fears, and individual needs as well as the positive experiences relative to their academic needs. Table 1 explains the relationship of the questions to the research question.

Table 1

Relationship of Questions to Research Question

Research Question	Research Question Subtopics	Question Number
How do Georgia students with visual disabilities describe their academic experiences in higher education?	Use of technology	6, 7
	Faculty	8
	Academic institution	9, 10

Review of the Literature

The subject area of visual disability and education is broad and involves many subtopics including ambulation, verbal communication, reading, writing, projection, and transportation. Sources used in this study involved a total of approximately 82 peer-reviewed journal articles from the previous 5 years. This review of the literature includes three key theme22s related to meeting the academic needs of students with visual disabilities. Those themes are (a) strategizing for modification, (b) communicating information effectively, and (c) utilizing supportive and practical methods.

Having accumulated sources relevant to the project study topic via courses taken during the doctoral program as well as other sources encountered as a person with a visual disability, a list of articles and books awaited formal review. Additional sources required searching databases such as ProQuest, EBSCOhost, and ERIC. Searches occurred in local libraries as well as the online library of Walden University. Google Scholar also contained appropriate sources, including contemporary sources for current technology and mechanics. Keywords used in the searches included *ADA disability, college ADA, visual disability, visual modification, teaching for visual disability, teaching with visual adaptation, visual modifications and learning, university,* and *learning with visual disability.*

Background

In almost all institutions of higher learning, an office or department is established to support students with disabilities with regard to their academic needs as a result of legislative actions. Section 504 of the Rehabilitation Act of 1973 stipulated institutional

leaders have a legal responsibility to make required accommodations or modifications to allow students with disabilities to achieve academic success. Yet, students with visual disabilities continue to face challenges in meeting their academic goals and experiencing the developmental growth associated with college or university life.

Like all students enrolling in postsecondary education for the first time, students with visual disabilities face new challenges and responsibilities (Yssel et al., 2016). Yet their need for accommodations along with the coursework as well as the lack of social inclusion may affect the students with visual disabilities. In the first decade of the 21st century, far more was written on the experiences of students with visual disabilities than the second decade of this century. This became evident when researching postsecondary students with disabilities in the databases, especially Google Scholar.

Different authors on the subject wrote on the reluctance of students with visual disabilities to share their disabilities with instructors. Yssel et al. (2016) noted a quote from Getzel and Thoma (2008) as still operative: “these students may be anxious for a ‘new beginning’ in an educational setting by not having to deal with being labelled” (p. 77). Other authors (Trammel & Hathaway, 2007) noted that students with visual disabilities may not want to add to the complexity of their lives by asking for help. Or perhaps students with visual disabilities may believe that they will be a liability or students with visual disabilities when group projects or activities are assigned (Yssel et al., 2016).

Yssel et al. (2016) interviewed students with disabilities who shared their feelings about reactions of faculty: “I didn’t want to be babied.” “I did not want to be treated differently.” “I don’t want to draw attention to myself.” All these comments reflect the reasons why students with visual disabilities would not want to make an issue of their disability. The response of faculty to the student with a visual disability reveals to the student the level of acceptance found in that faculty member. For that reason, faculty members need to learn to respond to students with visual disabilities in a healthy, accepting manner.

While studies have been conducted with similar goals and processes involving groups of postsecondary students, the technology available for students with visual disabilities has rapidly rendered many of these studies obsolete. Societal awareness of differences among individuals has emerged over the past 50 years and, with awareness, greater acceptance of persons with disabilities including visual disabilities has become more evident. Rather than humbly accepting with gratitude any sign of sensitivity to their visual disability, students with visual challenges are increasingly expecting and/or demanding accommodations and modifications. This cultural shift has been slow, but it has been noticeable.

The Rehabilitation Act of 1973 was one of the first pieces of legislation that guaranteed the rights to persons with disabilities in the United States (Education & Fund, 2018). All students who qualify as having a visual disability, according to Section 504, must receive appropriate accommodation and open-access classrooms. Section 504

provides an equal benefit and opportunity clause, which has often been cited as the *modus operandi* for creating services for students with disabilities in colleges and universities (Chamusco, 2017). In 1990, the ADA became law and updated the accommodations for a new generation (Shaheen & Lohnes Watulak, 2019). This act protects private and public institutions that fall under Title II and Title III of Section 504. Disabled students are protected against any discrimination, including refusing to provide services to them in any school or college activities (Singh, 2019; Yeo, 2017).

A few years later, in 1998, the passing of the Assistive Technology Act was useful in protecting the disability status of students who require technology to succeed where they may not have otherwise. According to Gallego and Busch (2017), the Assistive Technology Act requires tertiary personnel to grant available devices to visually disabled students. Other technological tools covered by the act include wheelchairs, voice-amplifying systems, and other software.

Ellcessor (2016) emphasized that, with these laws, students who have visual disabilities are allowed to work with mentors who are also visually disabled and who also work in the same field. All mentors should assist students in building a vital support system to overcome the critical barriers faced by people with visual disabilities participating in postsecondary education and beyond (Evers et al., 2016; Mutanga & Walker, 2017). As stated by Farmer and West (2016), the baseline measure of achievement in integrating students with disabilities lies in successful communication between the faculty head and students with visual disabilities (Pace & Pavone, 2018).

The corollary to that is that students with visual disabilities need to make their own needs known.

Conceptual Foundation

When relating the generalized manner in which society approaches individuals with visual disabilities, two models surface. The traditional model reflects the medical model: the notion that something is wrong with or missing from the individual (Fichten, 2020). As a result, individuals with disabilities are often treated as if they were diseased, sick, or less than the whole (Fleming et al., 2017). Those with disabilities bear the stigma of difference, of being another, of wanting full adulthood. If an individual with a disability asks for accommodation, they may feel insecure, unworthy, or less than human at needing to make such a request (Morningstar et al., 2017). The social model of disability, in contrast to the medical model, "identifies systemic barriers, negative attitudes, and exclusion by society (purposely or inadvertently) as contributory factors in disabling people" (Art Beyond Sight, 2020, para. 1).

According to the social model of disability, impairment refers to the loss or limitation of physical, mental, or sensory function on a long-term or permanent basis (Rembis et al., 2018). Disablement is the loss or limitation of opportunities to take part in the normative life of the community on an equal level due to physical and social barriers. The WHO has placed many conditions under the broader umbrella of visual disabilities. (WHO, 2020a).

Despite many challenges, students with visual disabilities often learn to be creative thinkers and are experts in their own lives—according to the social model of disability (Levitt, 2017; Pring, 2019). The focus of the model is on students' abilities and needs. In this model, students are encouraged to advocate for their rights in broader society and teach others that each individual's needs are different and valuable.

Theme 1: Strategizing for Modification

In the 20th century, legislation regarding the improvement of services expanded beyond civil rights for those with disabilities. It now mandates the implementation of modifications to allow individuals with disabilities to exercise those rights. Within this theme, I located a wide variety of literary sources that holistically captured how educators strategize modification efforts as time and society advance.

The Rehabilitation Act of 1973 was one of the first pieces of legislation that gave rights to persons with disabilities in the United States. All students who qualify as having a visual disability, according to Section 504 of the Act, must receive appropriate accommodation and open-access classrooms. Section 504 provides an equal benefit and opportunity clause, which has often been cited as the *modus operandi* for creating services for students with disabilities in colleges and universities. In 1990, the Americans with Disabilities Act became law and updated the accommodations for a new generation. This act protects private and public institutions that fall under Title II and Title III of Section 504. Disabled students are protected against any discrimination, including refusing to provide services to them in any school or college activities.

A few years later, in 1998, the passing of the Assistive Technology Act was useful in protecting the disability status of students who require technology to succeed where they may not have otherwise (Rembis et al., 2018). Some educators wrote about the need to use technology in the classroom and to familiarize learners with various forms of technology (Taylor, 2016). According to Gallego and Busch (2017), the Assistive Technology Act requires tertiary personnel to grant available devices to visually disabled students. Other technological tools covered by the act include wheelchairs, voice-amplifying systems, and other software.

Ellcessor (2016) emphasized that, with these laws, students who have visual disabilities are allowed to work with mentors who are also visually disabled and who also work in the same field. All mentors should assist students in building a vital support system to overcome the critical barriers faced by people with visual disabilities participating in postsecondary education. As stated by Farmer et al. (2016), the baseline measure of achievement in integrating students with disabilities lies in successful communication between the faculty head and students with visual disabilities. The corollary to that is students with visual disabilities need to make their own needs known (Taylor, 2016).

Theme 2: Communicating Information Effectively

Legislation can only advance accommodation so far. Even if students with disabilities acquire universally mandated services, they will not mean nearly as much if communication between students and faculty is developmentally stunted. Some scholars

have already explored the problems prompted by this second theme. Communication must not occur in ways that require students with a visual disability to perceive material visually.

According to Harry et al. (2016), studies in this context have shown that students with unique individual needs—especially those who are visually impaired—need support to achieve their goals. Faculty can recognize the talents of their visually impaired students once visual barriers to communication and learning are removed. Effective communication methods involve getting to know the students, clearly defining assignments, and assessing whether students comprehend assigned texts. Ashraf et al. (2016) used several technological and analytical tools to make data more accessible for them to read and understand. Altinay et al. (2016) illustrated that dialogical analysis is currently the most effective method of communication with students with visual disabilities.

As suggested by Altinay et al. (2016), adaptive technology is a category of tools used by colleges and universities to improve the learning and communication capabilities of students with visual disabilities. Taylor (2016) further clarified that this genre of technology helped enhance the operational abilities of students with visual disabilities and helped them throughout the rehabilitation process. Adaptive technology, as well as digital accessibility and robotic learning, carries the potential to enable students with visual disabilities to communicate effectively. Depending on the environment, students

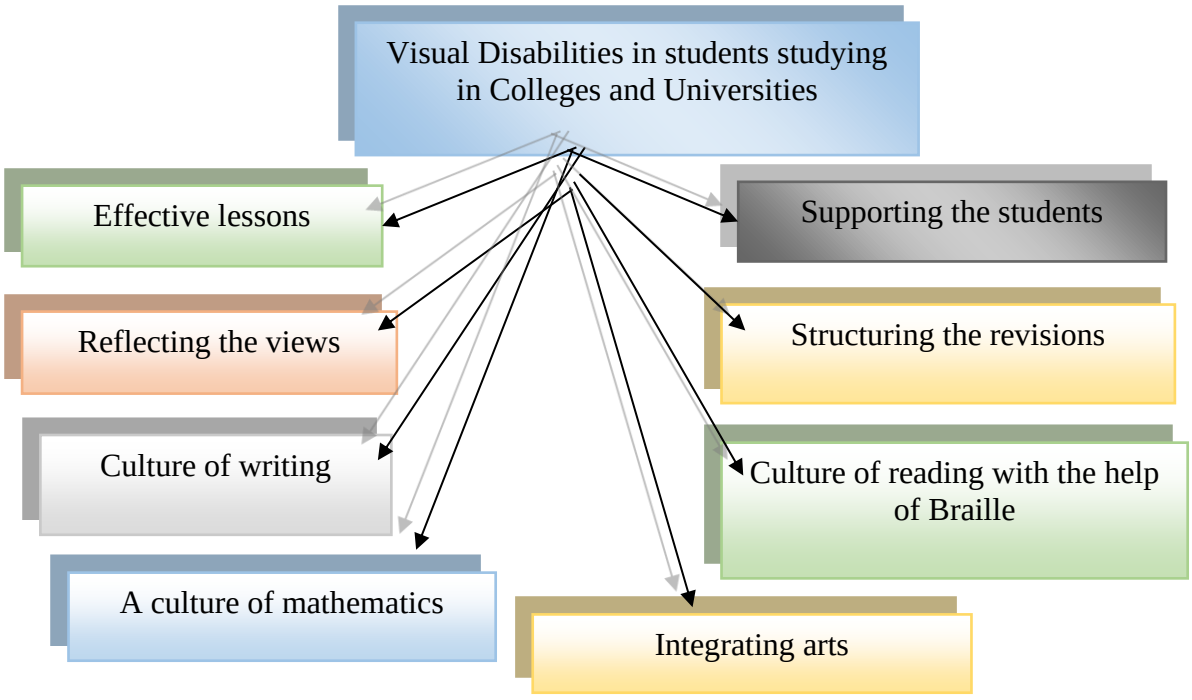
with visual disabilities can use pointing devices, screen keyboards, and different voice identification systems (Taylor, 2016).

The common denominator of all adaptive technology is providing a multisensory experience, allowing persons with disabilities to call upon all of their available senses to communicate. Challenges remain (Rembis et al, 2018), but the technology exists for those who can access and learn to use adaptive technology. The use of technology to facilitate communication can allow every student to participate in classroom exchange (see Figure 3). Methods such as information and communications technology and digital accessibility for visually impaired students would improve the quality of communication (Taylor, 2016).

Altinay et al. (2016) insinuated that for many students with visual disabilities, the concern may lie in finding suitable classrooms, understanding assignments, or demonstrating comprehension. The ability of the student to achieve academic success is determined by effective communication between the student and as many members of the educational system as possible: professors, administrative staff, and department heads.

Figure 3

Tools for Communicating Information



Note. From "A Systematic Literature Review of the Application of Information Communication Technology for Visually Impaired People," by M. Ashraf et al., 2016, *International Journal of Disability Management Research, 11*, p. 18.

Theme 3: Utilizing Supportive and Practical Methods

Technological innovations are essential to educational access for students with visual disabilities. Students with visual disabilities cannot access textbooks in a normative manner (Altinay et al., 2016). They often face problems with face-to-face communication since many are unable to interpret facial gestures and body language. Clark et al. (2017) stated that technologies are not only targeted at teaching methods associated with specific perceptual content but are also focused on reducing general

challenges faced by students with disabilities. According to Correa-Torres et al. (2018), such tools can offer a greater sense of equality within the dissemination of knowledge and sharing of resources.

New tools are part of the everyday experience of persons with visual disabilities. Their experience challenges them to adapt to new and exciting means to engage in the learning process. The results are often quite rewarding. Hasper et al. (2015) reported that various learning tools, such as robotic learning, virtual interfaces, and mobile learning techniques, can assist students in becoming more involved in academic activities. Appropriate activities can successfully limit the adverse effects of a disability in daily life.

Taylor (2016) suggested that distance education and virtual learning methods can be enhanced through further use and development of technology. Education and training courses can be offered to students in remote locations through synchronous and asynchronous delivery methods. Gallego and Busch (2017) noted that auditory lectures or podcasts could also be provided for students with visual disabilities. Live chat platforms such as Skype and Google+ can help access learning environments.

Establishing a rapport rooted in respect and a welcoming environment engenders a positive attitude toward learning. With increased accessibility to online learning with technologically interactive platforms, students can root themselves more securely within the learning environment in the postsecondary educational experience. Each academic field has its appropriate educational practices developed over time. Faculty can share

different methods and ideas across disciplines. Whether consensus exists or not, the array of options is broad for educators.

Challenges do come with the introduction of these strategies. Nielsen (2016) argued that instructors often do not understand what training educators need to be able to meet the needs of their students with visual disabilities. Training instructors need to familiarize themselves with available platforms to achieve specific learning objectives (Evers et al., 2016). Instructors also need to be taught different approaches and techniques to be able to interact effectively with students with visual disabilities. Kumar et al. (2016) realized the dangers and argued that, initially, instructors should focus on developing trust with students with visual disabilities.

Implications

In response to the research questionnaire emailed to them, 10 Georgia students with visual disabilities described their academic experiences in higher education. The results of this survey would assist not only the Office of Disability Services but also administrators and faculty in working with students with visual disabilities. The support and potential collaboration of all three groups would influence greater academic achievement for students with visual disabilities. Moldoff (2021) argued that presenting a professional development training for individuals who work as administrators, faculty, and staff at postsecondary schools enabled attendees to learn to be more enlightened about the nature of visual disabilities. Altinay et al. (2016) suggested that a professional development training would also be an opportunity to review the needs of this group of

learners. Especially the Office of Disability Services would learn up-to-date opportunities for meeting the needs of this group of people with disabilities.

Following a search of books on Amazon, using the key words of *college students' disabilities*, 60 books appeared on the first pages that specifically dealt with the topic of the three key words. A similar search among peer-reviewed journals, using the same key words with the word *physical* paired with *disabilities,* yielded approximately 55 articles. A professional development training including up-to-date information on instruction of college students with a disability would greatly enhance their academic potential. The presentation of a professional development training on college students with visual disabilities would add to the literature on this topic.

Certain professions require continuing education for example: attorneys, medical personnel, and educators (Moldoff, 2021). According to Moldoff (2021), the most facile means of educating a group of professionals is by a professional development training targeting a specific topic to learn or emphasize for a specific purpose. As a result, presenting a professional development for administrators, faculty, and staff at postsecondary schools would be appropriate for informing all educational personnel to improve the academic environment and potential for support.

A professional development training would be an opportunity for the staff from the Office of Disability Services and faculty members to collaborate when working with students with visual disabilities. Relying upon the results of the research, the training would have specific goals selected to resolve issues raised following the analysis of the

responses. While the 10 participants represent a small sample of postsecondary students with a visual disability, their disabilities varied a great deal: from legally blind to blind since birth. According to NCES (Figure 1, Note), less than 0.5% of postsecondary students with disabilities were served under the Individuals with Disabilities Education Act. NCES reported a visual disability as a subset of all postsecondary students with disabilities; students with a visual disability were not counted in percentages given to various disabilities.

Based upon the data analysis, three topics surfaced to be covered in a three-day professional development training. The first topic would be the form of support faculty could offer students with visual disabilities. Because students with a visual disability would enroll in classes on an individual basis, college professors might have one or five students with a visual disability in different classes.

A second topic would involve access to education. Three participants elaborated on this topic in extended fashion, noting both the legislative right as well as the human right to education. A third topic would include the Office of Disability Services at the university that also served students from the college that was on the same campus. The professional development training would be developed primarily for both the personnel in the Office of Disability Services and for the faculty at the two schools.

Organizing a professional development training for faculty and administrators who may come in on different days and different times is difficult. A three-day professional development training would be even more difficult, so flexibility needs to be

built into the structure of the training. Because I have a visual disability, I will have an assistant for support during the training. Presentation and time for discussion among faculty and administrators will assist in maximizing efforts in collaboration between the staff at the Office of Disability Services and the faculty. Such a professional development training, informed by the results of the study conducted at the Georgia college and university, will serve as a practical tool for enhancing the academic environment for students with visual disabilities.

Summary

Many visual disabilities go unrecognized and unnoticed by the average educator because schools often have separate classrooms or faculty for those previously defined as visually disabled. Diverse levels of visual disability are not always apparent, let alone addressed. The lack of resources and knowledge of what it means to learn with a disability have only been addressed relatively recently.

Equal opportunity and civil rights laws such as Section 504 were established to present solutions to these problems over time. Instructors in higher education need to attend training to strengthen their knowledge and understanding to support students with visual disabilities. Then the education field would begin to see a positive change in the grades and graduation rates of students with disabilities, especially those with visual disabilities. Progress would be slow but steady. With resources and training, faculty of students with visual disabilities would experience less confusion and fewer feelings of helplessness or incapability about resources.

One focus of this study was to affirm that visual disabilities are different from cognitive disabilities. With the right tools and instruction, a person with a visual disability can retain and process the same information at the same level as the average learner. People with a visual disability learn life skills and new knowledge differently because other senses must be used to advantage in the absence or near absence of the visual sense (Iowa Department of the Blind, n.d.). The concept behind the invention of Braille text can be applied holistically in response to this issue. Because students with blindness cannot read printed text, the text was put into their hands in Braille.

Likewise, if a teacher were to put that solid object into the hands of someone with a visual disability, they could then interpret the incoming sensory information using tactile experience—just like a hands-on learner without a visual disability would do. The information has been designed for the learning style of the learner. Digital tools are transforming daily life and education for students with disabilities. Nearly every aspect of life is now capable of being experienced digitally, including learning and teaching. The technologies discussed in this review can allow students with disabilities to teach themselves course material at home like any other student.

Learning challenges among students with visual disabilities who are aiming for higher education are evident. Current literature indicates three broad themes in the current scholarly discourse: (a) strategizing for modification, (b) communication methods, and (c) use of practical methods to assist students with visual disabilities. A

review of the responses of this study reveals the importance of these elements in the classroom.

The review of literature has elucidated the phenomenon of and methods for helping students with a visual disability, specifically those who face challenges in college classrooms through communication barriers between instructors and faculty members. The sections that follow include the methodology used in this project study and its rationale (Section 2), and the project developed in response to the results of the study (Section 3). Section 4 contains a discussion of the strengths and weaknesses of the project study along with recommendations for alternative approaches and conclusions regarding the value of the study. A discussion of scholarship, project development, and leadership and change precedes a reflection on the importance of the project. Suggestions for future research follow in Section 4.

Section 2: The Methodology

Qualitative Research Design and Approach

Moldoff (2021) stated that a research methodology can be qualitative, quantitative, or involve mixed methods. To respond to research questions beginning with "how," the study would generally be qualitative (Creswell & Poth, 2018; Moldoff, 2021). The research question of this project study follows (RQ1), "How do Georgia students with visual disabilities describe their academic experiences in higher education?" and involved a qualitative descriptive design. A descriptive study investigates real-life phenomena through a detailed analysis of a limited number of events conditioned by their relationships (Burns, 2019).

Qualitative Descriptive Research

Descriptive research is prominent in research involving education, sociology, and community-based problems (Loeb et al., 2017), such as the experiences of college students with visual disabilities. The quantitative method would not be appropriate for this project because, with this method, a researcher focuses on a specific, measurable question to test a hypothesis (Campbell, 2017; Eyisi, 2016; Savela, 2018). The quantitative method is also used to measure relationships (Loeb et al., 2017). The research question does not directly involve relationships; it is a *how* question that signals the need for qualitative research.

A qualitative descriptive design was selected to learn the experiences of the increasing number of students with visual disabilities enrolled in higher education in

Georgia. Educators and administrators, along with students, together promote the inclusion of students with special needs (Loeb et al., 2017). The responses to this research question involve perceptions, experiences, narratives, and observations—data that did not suit the quantitative method of research (Campbell, 2017; Eyisi, 2016; Savela, 2018). Instead, the qualitative method was more appropriate because words, symbols, pictures, and expressions of feeling are qualitative designs (Campbell, 2017; Liao & Hitchcock, 2018). With a qualitative approach, a researcher explores concepts and ideas and allows them to develop during the collection of data (Creswell & Poth, 2018). As a result, this project employed a descriptive design.

Alternative Designs

Several designs may be used with the qualitative method, including a descriptive design, narrative design, ethnographic design, phenomenological design, or a grounded study. The selection of a design depends on the problem, purpose, and research question. Each design suits a specific type of data solicited by the research question (Kross & Giust, 2019). The question required descriptions of students' experiences on campus and online that involved beliefs, impressions, and perspectives that did not fit the quantitative model and needed to be flexible enough to accommodate whatever responses participants might share.

The study was designed to involve 10 participants. While this number may seem low, limiting the number of participants in a qualitative study is often desirable (Creswell & Poth, 2018). The target participant population came from the population of individuals

with visual disabilities attending two postsecondary schools—an admittedly small population. Many participants might have resulted in an amount of information too large to handle for practical use. Even 10 participants presented a range of variations in visual disability and experiences in higher education.

Another possible qualitative design is ethnography, a form of research in which the focus is on the "sociology of meaning through close field observation of sociocultural phenomena" (Creswell & Poth, 2018). Ordinarily, ethnographic research involves integrating with the society or community as an understudy for a substantial length of time to observe the mores, practices, and activities of the society or community (Creswell & Poth, 2018). Because the participants did not share any characteristics other than school and visual disability, and the research did not allow for a lengthy period of involvement, a more suitable qualitative design was needed. Another aspect of ethnology is the time spent observing a group to learn its societal patterns or culture (Loeb et al., 2017). The time allotted for this research did not allow for a lengthy period of observation.

A third qualitative design was considered: grounded theory. The grounded theory design was useful when exploring a phenomenon about which little had been written. Yet the research on individuals with visual disabilities and on transitioning from high school to postsecondary learning is substantial. The grounded theory was first presented in 1967, when Barney Glaser, Anselm Strauss, and Juliet Corbin developed the design (Charmaz & Thornberg, 2020).

A descriptive study proved the most useful qualitative design for the current project. A researcher may use a descriptive design to explain the process and outcomes of phenomena studied through comprehensive observation (Charmaz & Thornberg, 2020). In a descriptive study, the focus is on an individual, organization, event, or phenomenon at a specific time and place. A qualitative descriptive study design was used for this research to help describe a phenomenon in the real-life context in which it occurred. A qualitative descriptive design arose as the design of choice to address how Georgia students with visual disabilities describe their higher education experiences.

The problem addressed by this project study was the lack of understanding by faculty and administrators of accommodations required by students with visual disabilities to succeed in higher education. Qualitative data collection using a questionnaire, with a focus on the thoughts, feelings, and reactions of participants, is the ideal approach to determine gaps in the provision of rights to students with visual disabilities. According to De Cesarei and Baldaro (2015), “The increase in the number of studies which involve students with disabilities, as well as the advances in technological assistive tools, have made it increasingly popular to conduct research using online questionnaires” (p. 374). While all means of data gathering have both advantages and disadvantages (DuBois, 2019, for the purpose of this study, a questionnaire seemed most appropriate.

The questionnaires were selected instead of conducting interviews because of the advantages of “cost efficiency, scalability, and quick results” (Debois, 2019, p. 1).

Questionnaires are typically paper based or can be emailed (Adams & Cox, 2008). The questionnaire could be emailed to the participants with little or no cost and is a preferred way of obtaining information from participants with visual disabilities. According to Khan et al. (2020), “Electronic Mail has become an essential tool of communication and collaboration for sighted, visually impaired, and blind people” (p. 113). The questionnaire was sent to participants in a consistent interface design, in logical order, with an easy text layout so that the questions could be answered and sent back with ease.

By emailing the questionnaire, participants would not have to find transportation to a certain place and could use assistive technology to read the questions at their own pace.

Although qualitative studies usually involve a sample smaller than those found in quantitative studies, the use of an emailed questionnaire would accommodate as many participants as wanted without incurring added expense. The use of questionnaires also allows for quick analysis with the correct tools. Statistics are not needed for a qualitative analysis, yielding some relief for researchers without a strong background for quantitative analysis. According to Moum (1998), “On average, research participants disclose sensitive and personal information, such as mental health symptoms, drug misuse, and history of sexual assault more frequently when responding to self-administered questionnaires than when taking part in face-to-face or telephone interviews” (p. 90). An additional advantage is the ability to provide greater anonymity to participants, thereby providing more accuracy in the responses.

Debois (2019) noted that, admittedly, questionnaires involve some disadvantages; for one, participants may not be completely honest or skip some of the questions, as was evident in this study. Also, despite the work put into writing clear and concise questions, the participants may still misread or misunderstand the question. Questionnaires also require some skill in writing to be able to express feelings or experiences. One way to avoid this is to use a Likert scale, when possible, to assist with defining strength and assertion.

Analyzing the responses to a questionnaire may also take time, depending on the type of question involved. The necessity of writing clear, concise, and appropriate questions cannot be understated.

> In studies relying on self-report, responses may be biased by the participant's attempt to deliver a positive self-image to the experimenter (Schwarz & Strack, 1991); in the case of people with disabilities, this effect may be particularly emphasized as respondents try to minimize the negative effects of stigma. (De Cesarei & Baldaro, 2015, p. 375)

Sometimes adding to the confusion, participant bias can result in misleading or incorrect responses. For instance, if a participant has just had a major argument with an instructor over grades, the bias might be generalized for all instructors.

Dubois (2019) emphasized the need to avoid response fatigue or questionnaire fatigue. Surveys and questionnaires appear in all the media today, and some audiences may be researched more than others, resulting in an overabundance of questioning.

Because of the open nature of recruitment through the media and the resulting small number of participants, the use of questionnaires seemed the most appropriate for this study.

In this study, the purposive sampling technique and the snowball technique proved helpful (Serra et al., 2018). The returned data included feedback from five students with visual disabilities from a public university and five students with visual disabilities from a community college. The results of the questionnaires indicated the form of project to be developed: a professional development training on the topic of working with students with visual disabilities, involving a formative assessment.

Participants

The purpose of this study was to explore how Georgia students with visual disabilities describe their higher education experiences. The number of people with visual disabilities in Georgia in 2015 was 262,800, but the number of students was unknown. The study sample involved 10 students with visual disabilities who currently attend or attended within the last 2 years, either a public 4-year university or a 2-year community college (i.e., five from each school). The participants were 18 years and older of any gender, of various ethnicities, and experienced a visual disability ranging from low vision to total blindness. The participant pool included 10 people of all genders and various ages and professional roles. Participants were asked to respond to questions regarding orientation and mobility skills on campus in response to closed and open-ended questions.

Because this was a qualitative study, obtaining reliable and appropriate information was more important than collecting a large number of participants using random means of selection (Creswell & Poth, 2018; Leedy & Ormrod, 2018). The purposive technique would more likely result in usable data. The amount of data obtained from questionnaires and interviews could become overwhelming and unmanageable if too many participants are involved. Obtaining a smaller, manageable sample was preferable to a large, nonfunctional number of participants—if the number was large enough to achieve data saturation (Hennink et al., 2016; Hennink et al., 2019). This study involved 10 students with visual disabilities: five from each of two educational institutions. The gathering of data from 10 students from two schools should provide the diversity needed to represent the range of students with a visual disability in the target population and still achieve saturation.

Creswell and Poth (2018) explained purposive sampling as a technique in which selected participants have specific characteristics or experience with the described phenomenon. When no new information is obtained, two more participants are needed, and the data collection is thought to be complete. Selecting 10 participants was a matter of convenience while employing the purposive technique. Leedy and Ormrod (2018) identified that a typical sample size in qualitative research usually ranges from 5 to 25 participants when interviewing participants who have direct experience with the phenomenon under investigation.

Recruitment

Participants were recruited for the project study by using three communication methods that people with visual disabilities use to remain informed and live successful and independent lives. These three sources were the Georgia Radio Reading Service, the Center for the Visually Impaired, and disABILITY Link. The Georgia Radio Reading Service (GaRRS) is Georgia's only radio service for individuals with vision loss. This service raises awareness about blindness and includes programs with books, magazines, and newspaper readings ranging from stories to grocery store sales. The service continues for 24 hours and broadcasts its diverse programs to more than 17,500 listeners, adding 50 to 60 new audience members a month.

The Georgia Radio Reading Service (GaRRS) was instrumental in allowing my research study to be introduced to recruit participants by broadcasting a program about the research to the visually disabled community. During the broadcast, the announcer described the research and asked listeners to contact me via email if they were interested in participating. Once a listener contacted me, the task was to obtain information about the individual to determine if they qualified for the study. If so, the individual received the letter of invitation and an informed consent form (see Appendix C and Appendix D), and a list of questions via email.

The Center for the Visually Impaired was another resource used to gain participants. The center is based in Atlanta and provides services to individuals who are visually impaired, such as orientation and mobility training, independent living skills, and computer and Braille training. The Center for the Visually Impaired provides a service

called InfoLink, an information resource that promotes services, events, seminars, and resources that may be of interest to the community of individuals with a visual disability and their families. Individuals with visual disabilities could receive information about this study by email or listen to information about the request for participants, depending on their subscription preference for email or phone. Once individuals responded, the same procedures as those who responded to the GaRRS advertisement were implemented.

The third, disABILITY Link is the Center for Independent Living in metropolitan Atlanta led by people with disabilities for people with disabilities. This center provides services and programs for the community of individuals with a visual disability in that area. The service is part of the right of people with visual disabilities to information, referrals, advocacy, and resources to live independent and successful lives in our communities. disABILITY Link publishes a monthly newsletter called *Dates to Remember* in which it allows individuals with disabilities to provide resource information to the community of individuals with a visual disability. *Dates to Remember*, which is distributed by email, served as a resource to obtain participants for my research. A description of the study was put in the newsletter and provided my contact information. I asked for individuals who qualified as participants and who were interested in the study to contact me. Once individuals responded, the same procedures as those who responded to the GaRRS advertisement were followed.

Participants' Rights

Any individual who was accepted as a participant received a letter of invitation and a copy of the Informed Consent Form (see Appendix C). In any study, participants in research have the right to protections, spelled out in an informed consent form (Kadam, 2017; Ripley et al., 2018). Before, during, or after the study, a participant was able to withdraw from this study by notifying me verbally or in writing.

Because no personal interaction was involved in the data collection process, the researcher-participant working relationship remained formal. The researcher must stay focused on the process and remain professional when communicating with participants. Participants should be aware of the processes used to protect the privacy and confidentiality of the study materials and the availability of the researcher to answer any questions.

All data associated with that participant would have been destroyed, and if possible, another participant selected if anyone had withdrawn. Also, any identifying information would have been removed from the data by the SurveyMonkey process. All data were identified with codes assigned by SurveyMonkey as the participants logged in to the questionnaire. Participants were asked to remember their code should they wish to withdraw at any time. In that way, the participant's data could be deleted from the database.

All physical research data and associated materials are kept in a locked safe to which only I have access. Electronic data are stored on my computer in a password-

protected manner. Five years following completion of the study, all data and associated materials will be permanently destroyed by crosscut shredding and permanent deletion of electronic materials.

Data Collection

To respond to the research question, How do Georgia students with visual disabilities describe their academic experiences in higher education? participants with visual disabilities who had relevant experience at the selected postsecondary institutions were sought (Creswell & Poth, 2018). Following approval of the proposal and the Institutional Review Board application, the data collection process began with the distribution of information about the study and the recruitment of participants. Once individuals began responding to emails, the first 10 students were selected, ensuring five represented each postsecondary institution.

Researchers have established that a person's values determine whether he or she will act when an opportunity is presented (Sagiv & Roccas, 2017). How a person responds to a request to participate in a study depends upon the person's interest in the topic as well as the value placed on it: "Though it has not been used to study incentives, we believe [*values*] may also influence participation decisions when incentives are offered" (Hsieh & Kocielnik, 2016, Background and Hypotheses, para. 6). In this instance, participants were offered the incentive of a gift card valued at $10 upon completion of the questionnaire.

This study included a sample size of 10 participants who satisfied data saturation (Statistics Solutions, 2019). The questionnaires resulted in the data from which to search for common themes and factors. At the same time, to attain saturation, sometimes the need to add additional participants arises. For this study, additional participants were not needed.

Data Validity and Quality

To maintain the rigor and trustworthiness of a descriptive study, data collection and analysis must follow protocols agreed on by the scholarly community. This process helps to ensure the validity of the results. In answering the questions, responses ranged from experiences with admissions to faculty to academic coursework. Questions also concerned the safety of students and access to the library, student center, and disability services and the ability to enjoy student activities offered by the institution. This descriptive study consisted of a written questionnaire I constructed for this study to be completed by a sample from the target population of students with visual disabilities enrolled in higher education in the state of Georgia.

In this study, the objective was to obtain qualitative data based on asking the same 10 questions of all participants who were current or recent students in higher education with visual disabilities. These 10 questions flowed from the original research question, "How do Georgia students with visual disabilities describe their academic experiences in higher education?" and served to answer it. The first four questions elicited the demographic information about the participants, while the following six questions were asked to solicit information regarding the participants' experiences.

The six questions follow:

5. Did or do you utilize any special services at your academic institution such as Disability Services? If so, how well did they support your needs?
6. Did or do you use accessible technology?

7. How accessible is your academic institution's learning platform, i.e., Blackboard?
8. How well do you feel the faculty supported your needs? Or not? In what ways?
9. On a scale of 1 to 10, would you recommend another student with a visual disability to attend this academic institution? Why or why not?
10. Why is it important for academic institutions to support the needs of individuals with visual disabilities?

Data Collection Instrument

The data collection instrument created for this study also appears in Appendix B and was constructed by the researcher based on material from the literature review. The research used in constructing the questionnaire involved the type of content to incorporate in the questions as well as suggestions on formatting questions to elicit the appropriate information (DuBois, 2019). The completed questionnaire was reviewed by an expert committee including members familiar with the construct of interest of the study along with a methodologist (Tsang et al., 2017). Participants were instructed to respond to the questions via email. The preference to solicit responses by email arose because meeting in person can create needless transportation challenges for people with visual disabilities. By answering the questions via email, all of the responses were saved in one folder with the participants identified using only a numeric code. The questionnaire was distributed to allow for a 2-week timeframe to complete the questionnaire.

In general, the responses to the questionnaire were relatively brief, and any further discussion on the participants' responses proved difficult. No transcribing was necessary because the questions and answers were already digital and were saved onto a hard drive for analysis. The data only needed organization into groups and then into clusters as described in Clarke and Braun (2018). In the data collection process, reducing researcher bias involved remaining conscious of the differences in years of matriculation.

Throughout the study, to the participants, my identity remained anonymous, not having attended either of the institutions in the study. This anonymity helped to mitigate researcher bias because no knowledge or preconceived feelings toward any of the participants were present. Each participant received the same 10 questions, which also helped to reduce bias.

Data Analysis

Following the process of analysis of developed by Clarke and Braun (2018), data analysis involves reading the responses carefully, isolating, and categorizing meaningful statements, clauses, and phrases. Participants' comments were carefully read to ensure proper comprehension and analysis. Next, all irrelevant material was removed from the excerpts so that only substantive material remained (Clarke & Braun, 2018).

For this descriptive study, the plan was to analyze transcribed data using Dedoose, a web-based software program for qualitative analysis developed by researchers at the University of California, Los Angeles, California (Dedoose, 2018). As participants submitted their responses, the brevity of responses indicated that the analysis of textual

material would be more straightforward and simpler than expected. As a result, the analysis was completed manually. Excerpts answering the research question were isolated and clustered according to concepts covered by the questions and categorized according to topic matches.

Participants' Demographics

The participant pool included 10 people of all genders and various ages and professional roles. Demographic information from the participants was obtained via the first four closed-ended questions on the research instrument (see Appendix B for the full research instrument). Those questions were:

1. What is your age?
2. What is your gender?
3. How many years have you been visually impaired?
4. What academic institution do you attend?

All 10 participants answered the demographic questions depicted in Table 2. The four demographic factors included were age ranges, gender, years with a disability, and college attended. Most participants were in their 30s and had been blind from birth. Twice as many men as women took part in the study, and the participants' academic experiences were evenly divided between two institutions of higher learning.

Coding

The process of coding involves categorization of words and phrases with similar meaning based on the responses to the questionnaire. The data were read and reread to

search for duplication or repetition of words, phrases, or clauses that would include a summary of responses leading to development in the report and the creation of tables. The subsequent sections involved the step-by-step process of the thematic analysis protocols of Clarke and Braun (2018).

Table 2

Demographics of Participants

Demographic		Number of participants
Age Range	18-20	1
	21-30	3
	31-40	5
	41-50	1
	41-50	7
Gender Male		3
Female		3
Years of Impairment:	Since Birth	8
	Since Adolescence	1
	Since Young Adulthood	1
College Attended:	School A	5
	School B	5

Following Clarke and Braun's (2018) protocol, Step 1, reading and rereading the data, was complete. Step 2, involving coding the material, was also examined to ensure each code represented one idea. Based on this information, the codes were ready for grouping, determined by the elements in the research question: (a) Georgia students with visual disabilities and (b) their academic experiences (c) in higher education. Once the codes were grouped according to these three elements, they were further categorized according to subelements: The subelements are presented in Table 3.

The next process involved in coding resulted in eliminating codes that bore little to no relationship to the research question. After realizing the essential theme found to coincide with the codes, excerpts from the data were isolated to serve as support for each

theme. The memoing was consulted to substantiate reactions and other expressions indicating meanings associated with the extracts.

Table 3

Initial Grouping of Codes for the RQ 1 with Results

Research Question	Codes/Relevant Questions	Meaning Words	Result
RQ 1: How do Georgia students with visual disabilities describe their experiences in higher education.	Students' need for accommodations. Question 5, 6, 7	Assistive Technology	Need for training
	Support of faculty and Office of Disability Services Questions 8, 10	Knowledgeable faculty and engaged personnel at Office of Disability Services	Need for information
	Access to education for all. Question 9	An accommodating climate for all persons with a disability.	Sensitivity to individual needs of all

*Numbers following the codes indicate frequency.

The final steps involved reading and rereading the material. Attention is paid to the meaning behind the words to arrive at common thoughts surfacing from the responses. The results indicated the students with visual disabilities were asking that their instructors and personnel assigned to assist them be knowledgeable of the environmental needs and personal support of a student with visual disabilities.

The purpose of this study was to explore the experiences of students with visual disabilities in Georgia's higher education. In doing so, information regarding teachers' interactions with these students and the accessibility of assistive technology might be assessed. At the least, information on improving the postsecondary academic experience of students with visual disabilities might be available. Based upon the results of this

study, a means might be found to improve the experience of college and university students with visual disabilities.

Discrepant Cases

The data in the present study were not easily grouped and categorized because some of the responses included discrepant comments. Some participants, when responding to a question, often included discrepant information. As an example, in response to Question 8, one participant wrote, “Some of the faculty were supportive, and some were not. Some of the faculty members were not aware of how to support students with visual disabilities.” To recognize all the comments expressed by the participants, the responses were isolated and recognized as individual responses. Every comment counted. As a result, the phrases in the responses, both confirming and nonconfirming, were included in the analysis.

Evidence of Quality

In their classic book, Denzin and Lincoln (2017) discussed rigor as applied to qualitative research. Because qualitative data cannot be replicated and no formulas exist with which to subject qualitative data to strengthen rigor, other means of strengthening the data are presented. To ensure the strength of quantitative research, triangulation, member checks, and revealing any potential bias. Because the responses were conveyed by email, no transcription was required, and because one research question provided the guide for the methodology, triangulation was not available. The quality or rigor of the research depended upon the trustworthiness of the data. The importance of transparency

(Maiocco & Smith, 2016) when conducting research is the key to establishing confidence in the results. Reinforcing the rigor or quality or transparency in this 00study consisted in exhibiting credibility, transferability, dependability, and confirmability.

Credibility. The word *credibility* in this context refers to the clarity and consistency embedded in all communications and processes conducted during the qualitative study (Anney, 2015). All participants received a full description and information regarding the questionnaire. They were also fully informed about their rights and the efforts made regarding privacy and confidentiality. Participants were also screened to ensure their experiences would add to the data for the study.

Transferability. Denzin and Lincoln (2017) described *transferability* as analogous with generalizability in a quantitative study. Because of the nature of qualitative studies, generalizability is not a characteristic sought by qualitative researchers. Yet, with caution, researchers can learn some things or do things that can be helpful with other similar populations or subjects, referring to external validity (Denzin & Lincoln, 2017). Participants striving to use results from a qualitative study need to examine the criteria for participant selection and follow the data collection protocol carefully. . . quality of data (Malsch & Salterio, 2016). Those factors include the type of data and the underlying theoretical foundation. This study involves qualitative data offered by experienced individuals and a solid foundation with the social model of disability. While ordinarily involving all the participants during the analysis to help

assure accuracy in this study (Rodham et al., 2015), the data were clear and obvious requiring little interpretation.

Confirmability. The word *confirmability* refers to the objective quality of the research data in the study; confirmability also refers to the objectivity *or the ability of others to* confirm or corroborate findings (Chess, 2017, section 3, para. 3). The rigor of the study is subject to several factors in qualitative research (Maiocco & Smith, 2016). Throughout a study, the researcher must be mindful that every step of the methodology must be subject to the characteristics of trustworthiness (Coughlan & Cronin, 2017). The fact that the findings actually reflect the words of the participants assures the confirmability of the data

Data Analysis Results

After carefully reviewing the written responses, a search for common themes began (Clarke & Braun, 2018). The results of this study conducted in Georgia reveal that faculty, administrators, and staff needed more training working with students with visual disabilities in higher education. All participants were registered with the Office of Disability Services on their campuses; few elaborated on the responsiveness of office personnel to their needs. The questions on the research instrument (see Appendix B for the full instrument) were either basic demographic questions (the first four questions) or were content questions" (the last six questions). The following paragraphs contain the responses to the latter six open-ended questions on content.

Question 5: Did or do you utilize any special services at your academic institution such as Disability Services?

All participants answered "yes." Most participants noted that they received positive support. One participant replied that he received only what one might expect—implying that the service was worse than desired—while another participant noted that the Office of Disability Services did not meet expectations. Another question in this study elicited responses to the level of appropriate technologies available to college and university students with visual disabilities.

Question 6: Did or do you use accessible technology?

All 10 participants answered, "yes." While all participants used adaptive technologies, and a few indicated the precise equipment they used. In terms of the type of accessible technology utilized, the most commonly used form of technology by participants was a screen reader and/or a screen magnifier. All of the participants answered *yes* to using disability services. They did not elaborate on how the Office of Disability Services supported them. The next question discussed accessibility.

Question 7: How accessible is your academic institution's learning platform, i.e., Blackboard?

Some participants answered the responses with the same issues such as problems with accessing Blackboard. Responses included:

- It is very accessible.
- Accessible with problems.

- Pretty accessible.
- Sometimes I have challenges with using Blackboard and have to get support to navigate it effectively.
- I did not have many; occasionally, I had issues with accessing the platform.
- For the most part, Blackboard has been OK; occasionally, I have had issues navigating the system and have to contact disability services for support.
- Some tab sets in Blackboard are confusing and frustrating to navigate with a screen reader. Pictures often lack alternative text, and JAWS cannot read or describe them. [JAWS is a Microsoft Windows screen reader product that converts text input to either speech or Braille output.]

Participants with low vision noted that contrast and color schemes on Blackboard were of great concern. At least three more students had some challenges working with the platform. Two participants indicated that Blackboard was not very accessible.

Participants were asked about the support they received from faculty. If the faculty did support students with visual disabilities, how did they support them? Participants were asked about the support they received from faculty. Did faculty support them or not? On the questionnaire, the question specifically asked,

> Question 8: How well do you feel the faculty supported your needs? Or not? In what ways?

Responses to Question 8 varied.

- I feel like they support me pretty well. I recently graduated from School B, and pretty much all of my professors were very accommodating. This semester, I will be starting at X campus, and, so far, my professors seem willing and ready to help.
- Faculty supported my needs as I made them known.
- For the most part, my needs were supported by most faculty.

Four participants used the word *Acceptable* in their responses. Some qualitative comments correlated to this response, including the following:

- I believe the disability department did what they could to help me and have knowledgeable staff, but the online environment is not set up well for visually impaired students who use screen readers.
- Some of the faculty were supportive, and some were not. Some of the faculty members were not aware of how to support students with visual disabilities.
- I have issues with several faculty members, as some of them had issues with allowing me access where other students were not permitted.
- For the most part, my needs were supported; however, the faculty and staff need more educational training on how to support students with visual disabilities. Why? Because of a lack of knowledge.

The next question involved recommending the education institutions to other students with visual disabilities.

Question 9. On a scale of 1 to 10, would you recommend another student with a visual disability to attend this academic institution? Why or why not?

This question is a Likert Scale question, including a follow-up of "Why or why not?" (Vonglao, 2017). Six participants gave no response to this question. Participant #6 wrote,

- Maybe this is as good as it gets in Georgia schools, maybe not. I just hope there are better alternatives for other students out there. Yes, students with visual disabilities have to advocate for themselves and educate higher learning institutions on how to support their individual needs. School B is a huge university that is not easy for an individual with limited mobility.

Some participants wrote lengthy responses to the question, including these comments:

- I would definitely recommend this institution to other people with visual disabilities. They will find a lot of support from the Disabilities Office. The staff is really friendly and helpful. If something is not accessible, they will work with you to find a way to access whatever it may be.
- Yes, I would recommend the students to research the institution's policies and other pertinent criteria to make sure it is best suited for them to successfully accomplish their educational goals.
- The campus can be difficult to navigate, and not all buildings have adequate signage inside. Support services and disability services were adequate, however.

The last question for participants elicited some substantive information. The question asked:

Question 10: Why is it important for academic institutions to support the needs of individuals with visual disabilities?

- I feel like faculty support me pretty well. I recently graduated from School B, and pretty much all of my professors were very accommodating. This semester, I will be starting at X campus, and, so far, my professors seem willing and ready to help.
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- For the most part, my needs were supported; however, the faculty and staff need more educational training on how to support students with visual disabilities. Why? Because of a lack of knowledge.

Four participants marked *Not Well* in answer to Question 8. Question 9 asked participants to answer a quantitative question on a scale:

> Question 9. On a scale of 1 to 10, would you recommend another student with a visual disability to attend this academic institution? Why or why not?

This question is a Likert Scale question, including a follow-up of "Why or why not?" (Vonglao, 2017). Participants numbered 1-6 gave no response to this question. Participant #6 wrote,

- Maybe this is as good as it gets in Georgia schools, maybe not. I just hope there are better alternatives for other students out there. Yes, students with visual disabilities have to advocate for themselves and educate higher learning institutions on how to support their individual needs.

School B is a huge university that is not easy for an individual with limited mobility. Some participants wrote lengthy responses to the question, including these comments:

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- The campus can be difficult to navigate, and not all buildings have adequate signage inside. Support services and disability services were adequate, however.

The last question for participants elicited some substantive information.

Question 10: Why is it important for academic institutions to support the needs of individuals with visual disabilities?

The three responding participants had obviously put much thought into their foundational beliefs regarding their rights and expectations.

- It is important to support students with visual disabilities because there are hundreds of thousands of us, and we deserve a fair shot at it. It is important because people with visual disabilities, like many others, want to study and pursue college degrees as well. When institutions offer services to support the needs of the visually impaired, it is a tremendous help, and it helps a person’s time in college go much more smoothly. Education is so important at this time, despite our vision loss. Thomas Jefferson once wrote that education and democracy go hand-in-hand. Education is an inalienable right. Support us!
- If we want a society that is truly representative of the population, we cannot exclude anyone from attaining higher education. Aside from it being the law for institutions to provide accommodations to students with all disabilities, ensuring

access to education is also a morally correct choice. By fostering a diverse student population, you also expose people to varying viewpoints that may not be obvious otherwise.

- Equal and accessible education to all. Those of us who are visually impaired deserve the same success opportunities openly available to having individuals with disabilities brings diversity into the campus setting. Students with visual disabilities should have equal access and rights to attend educational institutions.

These are the primary findings derived from analyzing the data: The question about support from faculty stirred the strongest response from participants.

1. Participants recommended better training for faculty in dealing with students with visual disabilities.
2. Participants emphasized repeatedly the right of every student to access an education.
3. Participants indicated that they expect more from their local Office of Disability Services. This would look different for each school and each office, but local needs must be addressed better than they were at the time of the study in order for participants to have equal access to education.

Further research is necessary to learn more about the needs of students with visual disabilities and how those needs can be addressed.

Clarke and Braun Model of Analysis

Following the process of analysis of developed by Clarke and Braun (2018), data analysis involved conducting the six-step process with the responses, carefully, isolating, and categorizing meaningful statements, clauses, and phrases. Englander (2012) noted that in a qualitative study, the goal is to learn the details of a phenomenon from an individual's perspective by asking question. To that end, participants' comments were read and reread to ensure proper comprehension and analysis. The context of the phenomenon and various factors affecting a participant's experience were noted. All the words, phrases, and clauses relative to the research question.

For this descriptive study, the plan was to analyze transcribed data using Dedoose, a web-based software program for qualitative analysis developed by researchers at the University of California, Los Angeles, California (Dedoose, 2018). As participants submitted their responses, the brevity of responses indicated that the analysis of textual material would be more straightforward and simpler than expected. As a result, the analysis was completed manually. Excerpts answering the research question were isolated and clustered according to concepts covered by the questions and categorized according to topic.

Next, all irrelevant material was removed from the excerpts so that only substantive material remained (Clarke & Braun, 2018). Side comments, tangential material, emotional expressions, and so forth were deleted from the responses. Only material relevant to the question or research question remained, leaving quality data for the analysis. The process of reading and rereading the data to take notes for later use is

comprises the process of memoing. This process of memoing was helpful when beginning the coding of the material, adding to the validity of the data analysis by retaining consistency and explaining alignment. Clarke and Braun developed the following steps:

- Phase 1. Become familiar with the data. Become thoroughly familiar with the material in the transcripts, with memos on important data.
- Phase 2. Generate initial codes. Categorize data according to phrases found in the research questions and frequency to create chunks of data with which to form codes. By focusing on the research questions, the analysis remains a theoretical thematic process and not inductive.
- Phase 3. Search for themes. Classify codes into themes according to phrases found in the research questions, the focus is on seeking those categories of data occurring most frequently and combining them when useful to create more comprehensive themes.
- Phase 4. Review themes. Review themes and if overlap exists in the themes, some of the themes may be combined to form major theme of the study
- Phase 5. Define themes. Clarify the meaning of the themes relative to the research questions.
- Phase 6. Writing-Up. Prepare a summary report in a manner appropriate to the project. (pp. 16-23)

Limitations

Some limitations characterized this study. An important limitation was the choice not to conduct one-on-one interviews. Because interviews can result in intense pressure for the participants (Maharjan, 2018), questionnaires appeared to be more appropriate. Many participants might feel they are being judged during an interview (Maharjan, 2018), which might impair the hoped-for honesty and trust needed.

The use of questionnaires had the advantages of "cost efficiency, scalability, and quick results" (Debois, 2019, p. 1). By emailing the questionnaires to the participants with visual disabilities, they were able to use assistive technology to respond more effectively to the questions. Also, transportation would not be an issue. All participants answered all the questions, but the responses to the questions were often brief.

Voluntary participation in the study and the effort that participants made to contact me might suggest that participants would describe their personal experiences in detail. These participants may have believed that their quick and simple answers adequately depicted their experience without incurring further questions. Alternatively, they may have simply lacked the motivation to elaborate on some of the responses.

Using questionnaires is less time-consuming and allows participants to respond in a "frank and anonymous" manner (Rahman, 2020). Questionnaires are also not subject to geographic boundaries, making it easier to reach out to more participants. Questionnaires are also more convenient than interviews for participants who may complete the questionnaires at a convenient time.

With emailed responses to the questionnaire, the ability to read nonverbal expressions is lost. An additional consideration was the task of recruiting suitable individuals during summer session. Perhaps the most important limitation was that responses were brief and did not include the desired elaboration.

Conclusion

During the past 50 or so years, many changes have occurred with regard to attitudes toward those with disabilities and special needs, along with the electronic technologies available to those students with visual disabilities ("How Effective," 2015). More students with visual disabilities are entering postsecondary schools every day, requiring accommodations and modifications allowing those students to achieve academic success just as students without disabilities might. Recommendations to assist educational leaders in their efforts to meet the individual needs of students with visual disabilities are included in this study. American legislators have set the stage for equality of access to education. Educational leaders must fulfill their responsibilities to implement justice for students with visual disabilities in the postsecondary classroom.

The professional development project, a three-full-day endeavor, seeks to improve faculty and administrator knowledge in delivering education and services to higher education students with visual disabilities. The project is intended to inform and offer a philosophical and legal basis for providing accessible resources. It is also meant to show faculty and administrators actual pedagogical methods and technologies and inform the listeners how to access them and how to use them.

The rationale for professional development training, a review of the literature, and a description of the training focusing on faculty precede a description of a three-session training held over three days. The discussion also includes the process of implementation, potential barriers, and the sustainability of academic programs. Finally, the roles and

responsibilities of students and others involved in academic programs and a plan for evaluation of the professional development training are proposed.

Section 3: The Project

Introduction

The goal of this project is to teach faculty and administrators how to implement relevant legislation in colleges and universities. The responses from students with visual disabilities to the questionnaire initiated the decision to consider a professional development training for faculty and administrators. A three-day training developed for faculty and administrators will strengthen their awareness of the social model of disability and improve students' needs.

Rationale

Based upon the results of the analysis, faculty and administrators need to become more familiar with adaptive technology, person-first language (i.e., a person with a disability and not a disabled person), and collaboration with disability services. The clearer the understanding that faculty and administrators have about visual disabilities and the technologies upon which students with visual disabilities must rely, the more successful both students and faculty will be in the teaching-learning process. Thus, professional development training on visual disabilities for faculty will improve the relevant aspects of the learning experience.

Because the learning environment of the postsecondary classroom is continually changing, administrators and educators need to keep up with the needs of students with visual disabilities whom they instruct (Ellcessor et al., 2016; Gallego & Busch, 2017). The equipment used by students with visual disabilities is continually changing with the

ongoing development of electronics and accessible technology used to access information and communicate with others in the learning environment (University of Maine, 2020).

The problem addressed by this project study was the lack of understanding by faculty and administrators of accommodations required by students with visual disabilities to succeed in higher education. Thus, based on the results of the study, a professional development training emerged as a means of improving faculty and administrator knowledge in delivering education and services to students with visual disabilities (Gallego & Busch, 2017).

Review of the Literature

The problem addressed by this project study was the lack of understanding by faculty and administrators of accommodations required by students with visual disabilities to succeed in higher education. The responses to the question on faculty treatment garnered the most attention along with the belief that the Office of Disabilities should be more active on campus. While the participants varied in the responses of faculty, there was agreement on the need for faculty to learn how to work with students with visual disabilities. The project will be based on the results of the study, from which professional development training emerged as a means of improving faculty and administrator knowledge in delivering education and services to students with visual disabilities (Gallego & Busch, 2017).

The sources used in developing this training derived from extensive searches through databases and other sources available in the university library and local public

libraries (Bélisle-Pipon et al., 2019). Search terms included *ADA disability, college ADA, visual disability, visual modification, teaching for visual disability, teaching with visual adaptation, visual modifications, learning,* and *learning with visual disability.* The subject area of visual disability and education is broad, involving many areas such as ambulation, communication, reading, writing, projection, and transportation.

Attendance for postsecondary students with disabilities has increased in recent decades (Lombardi & Lalor, 2017, p. 107). Theobald et al. (2021) and Berghs et al. (2016) stated that the transitioning from a secondary to a higher education institution can be challenging and overwhelming for a student with a visual disability. According to Zeng and Landmark (2017), some of these academic barriers include retaining information and advocating for support services unavailable or inadequate to meet a full load of academic responsibilities.

Students with visual disabilities often lack background information and preparation for their studies, which can have a negative impact on their academic experience (Fichten, 2020). They may also experience attitudinal challenges among faculty who react to a disabled student with mistaken preconceptions about the student's skills, abilities, and needs (Kutscher & Tuckwiller, 2019). The growing number of students with visual disabilities attending postsecondary courses commands that attention be paid to this topic.

According to the social model of disability, professional development training for faculty and educational leaders can be useful in enhancing access to positive outcomes

for students with visual disabilities (Levitt, 2017). Social model thinking has important implications for the educational system. Anti-discrimination legislation, such as the United Kingdom's Disability Discrimination Act 1995, required schools and colleges to anticipate the needs of students with disabilities (Fell & Dyban, 2017). Educational officers need to make reasonable accommodations to established policies, practices, and procedures that persist in allowing students with disabilities to be placed at a substantial disadvantage or even mistreated (Bunbury, 2019; Singh, 2019). Unfortunately, meaningful access and retention barriers continue to affect these students.

The commonly provided accommodations in postsecondary schools include sign language interpreters, note takers or scribes, tape recorders, test-taking accommodations (Snider, 2021). Many other forms of technology are available for the postsecondary student with visual limitations. For the students who participated in this study, the problem did not lie in the attitudes or willingness of faculty to assist them. The problem consisted in the lack of understanding by faculty and administrators of accommodations affecting the academic environment in higher education required by Georgia students with visual disabilities to succeed. The responses of the participants in the study led to the preparation of the professional academic training arising from this project.

Professional Development Training

The world has changed rapidly over the past 50 years ("How effectively," 2018). In her retirement letter, a teacher with many years' experience in the classroom wrote that the profession she had trained for no longer existed (Anonymous, personal

communication, 2016). Doyle (2021) noted this is true in many professions and industries that demand yearly continuing education.

Professional development trainings take many forms: Career Advancement workshops and seminars, custom and corporate training, certificate programs, noncredit course development, CEUs, and business-oriented workshops and seminars—all dedicated to keeping the professional individual up-to-date with current ideology, teachings, and technology (Darling-Hammond et al., 2017). All professional employees ranging from dental assistant to social worker to lawyer are expected to stay current with their work environment (Doyle, 2021). With the changes that rapidly progress in every aspect throughout our lives, one could not say an MBA earned in 1972 would prepare an individual for hire as an executive today. As early as 1975, Schumacher (1996) noted that the rate of change from 1950 to 1960 was twice that of the preceding 50 years.

As Knowles et al. (2005) described in his work on andragogy, six principles characterize instruction for adults. Those principles include the need to know, experience, self-concept, readiness to learn, problem orientation, and intrinsic motivation. While these principles appear in various forms: assumptions, processes, and elements, they all describe the learning process of adults. Communication is one of the major skills instructors need (Edmeades, 2018) to convey the learning expected of them on the postsecondary level to adult learners.

Planning a Professional Development Training

At many universities, adjunct faculty are hired to teach certain classes and may or may not be on campus every day. Contract faculty in nontraditional schools also agree to teach certain classes at certain times, depending upon circumstances. As a result, faculty meetings and trainings must involve the rescheduling of classes or repetition of the training to accommodate adjunct or contract faculty (Evers et al., 2016). Because of the planning needed to schedule a professional development training for postsecondary faculty, the training must be beneficial to the faculty and well planned (Phelps, 2018). Phelps (2018) outlined five basic elements necessary for a well-planned professional development training. Those elements include the following:

1. Begin with a clear vision.
2. Maintain the right perspective.
3. Network.
4. Be responsive and take initiative.
5. Exhibit integrity.

To begin with a clear vision means to have an idea of the results of the training. How will faculty feel and respond to the presence of students with visual disabilities in their classes? Will they know how to gauge the needs of these students or where to go for assistance in planning and executing courses? Will the school become known as a helpful, positive educational institution for students with visual disabilities?

To maintain the right perspective, the training should not be perceived as a means to correct the behaviors and attitudes of misaligned faculty. Learning is a lifelong process

requiring professionals to remain knowledgeable of developments in their field. The training is a means of demonstrating ongoing growth in the educational profession.

Networking refers to the introduction and interactions of faculty during the training. Networking refers to the introduction and interactions of faculty during the training that might result in the development of relationships among faculty. Allowing for the establishment of relationships is especially warranted among adjunct and contract faculty whose one bond is the teaching of classes. Adjunct and contract faculty do not have the opportunity to meet and interact with one another unless such activities are scheduled. Networking also introduces such faculty to other campus offices and services (Phelps, 2018). According to Phelps (2018), a training is ideal for determining the faculty members and staff members who can become the *go-to* people on campus.

To be responsive and take initiative means responding to the suggestions that arise among faculty for more training. With regard to the continual changes in laws regarding teaching students with visual disabilities, all faculty need to remain up-to-date on legislation and campus conditions. Phelps (2018) suggested faculty developers need to remain alert to "create initiatives unique to your particular context and based on specific faculty needs. Be alert for instructional innovations and determine how best your center can support campus implementation" (para. 7).

Finally, exhibiting integrity refers to the discretion faculty developers need to maintain to ensure the training is a safe place to ask questions and seek advice. Demonstrating integrity, which extends beyond the training itself (Goldberg, 2018), will

assist in facilitating effective communication between attendees at the training and overlap into communication between instructors and students with visual disabilities. Assisting students with visual disabilities will be improved when faculty can understand more clearly the situation that students with visual disabilities experience and demonstrate the confidentiality that many such students expect and appreciate (Staff Writers, 2020). According to the Staff Writers (2020), "Training staff and instructors in inclusive teaching strategies geared toward students with visual disabilities contributes to a better learning experience" (para. 11). For this reason, a professional development training is selected as the project emanating from this study.

This next section describes the project deliverable: a professional development training. This training would expose faculty and administrators to the needs and rights of students with visual disabilities and the adaptive technologies and strategies available to meet those needs and facilitate those rights. I will be the facilitator of this training. Because of my visual disability, I will also have an assistant, as needed.

Project Description

The purpose of this professional development training is to provide faculty and administrators of postsecondary institutions with resources to support students with visual disabilities. These resources will support faculty and staff's understanding of how to collaborate with organizations and services to provide accommodations to strengthen the needs of students with visual disabilities in higher education. The training will include

three days of interaction based on the findings of the research study.

A three-day professional development training was determined to be the best approach to participants' comments regarding the need for faculty training (cf. Mokkapati & Mada, 2018). This professional development training was developed for faculty and administrators as well as those staff members who play an essential role in students' higher education. The goals for each day of the professional development training follow:

Goal 1. Provide postsecondary faculty and administrators with additional resources such as adaptive technology to support the needs of their students with visual disabilities.

Goal 2. Educate faculty and administrators on the importance of identifying the needs of a student with a visual disability and establishing a well-grounded relationship with that student.

Goal 3. Provide strategies for faculty and administrators to work collaboratively to support the needs of their students with visual disabilities.

Each day has specific objectives. After welcoming attendees and clarifying the goals and objectives of the session, they will be shown the daily schedule.

Day 1 Schedule

Day 1 Objective	**To strengthen faculty's and administrators' understanding of how to collaborate and services to provide accommodations to strengthen the needs of students with visual disabilities in higher education.**
8:00 -9:00 am	**Arrival. Sign in. Introductions.**

9:00 -10:00 am	What is adaptive technology? Group discussion/sharing.
10:00-10:10 am	**BREAK**
10:10 -11:00 am	Tools for Life: Discussion and activity.
11:00 -12:00 am	Presentation and Practice
12:00 - 1:00 pm	**LUNCH**
1:00 -2:00 pm	Group collaboration/brainstorming
2:00 - 3:00 pm	Recap of the Day and Reflections.

Day 2 Schedule

Day 2 Objective	**Educate faculty and administrators on the importance of identifying the needs of a student with a visual disability and establishing a well-grounded relationship with that student.**
8:00 -9:00 am	**Arrival, sign-in, follow up of yesterday's training.**
9:00 -10:00 am	Group discussion on NCCSD
10:00-10:10 am	**BREAK**
10:10 -11:00 am	Grout Activity on Tools for Life and NCCSD
11:00 -12:00 am	Role Play. Each group will work with a prepared situation to plan a presentation following lunch**.**
12:00 - 1:00 pm	**LUNCH**
1:00 -2:00 pm	Group Discussion on Role Plays.
2:00 - 3:00 pm	Recap of the Day and Reflections.

Day 3 Schedule

Day 3 Objective	**The faculty and disability services will collaborate to provide strategies to support the student with visual dISAbility needs.**
8:00 -9:00 am	**Arrival. Sign in. Introductions.**
9:00 -10:00 am	What is Disability Services? Group discussion and sharing.
10:00-10:10 am	**BREAK**
10:10 -11:00 am	Group Activity: Brainstorming by faculty and disability services**.**
11:00 -12:00 am	What is the social model of disability? How is it linked to creativity?
12:00 - 1:00 pm	**LUNCH**
1:00 -2:00 pm	**Group discussion on collaboration between faculty and disability services.**
2:00 - 3:00 pm	Reflection of the Day and Reflections.

The objective of the first day is to focus on the purpose and operation of adaptive technology. Recognition will be given for Tools for Life (2020), an online source for almost any topic relative to persons with disabilities. Tools for Life offers "online professional development to help you learn more about assistive technology strategies and solutions as well as the most recent information on AT devices and disability-related issues and trends" (Webinars, para. 1). Tools for Life provides various forms of resources from webinars to instruments to assist a person with a visual disability.

The objective of the second day is to provide information about the National Center for College Students with Disabilities (NCCSD) and ways faculty and administrators can utilize their services to improve postsecondary education for students with visual disabilities. The discussion centers on organizations that support persons with

visual disabilities, specifically. The NCCSD (n.d.) is “the only federally funded national center in the United States” (para. 1) providing resourceful information to those interested in improving the lives of students with disabilities in higher education.

The objective of Day 3 is to provide information about interacting with the Office of Disability Services and how they can utilize their services to improve postsecondary education for students with visual disabilities. The focus of the third and final day is on collaboration with the Office of Disability Services. Discussion will also allow for questions, answers, and comments on services available for students with visual disabilities.

Project Evaluation Plan

The success of an event reflects the way the event fulfilled its objectives. Many factors enter the success or lack of success of an event. Some events proceed quite smoothly, fulfilling all expectations. Despite careful planning, professional development training does not always go as intended. Faculty may resist attending yet another training, believing they do not time for such events, or they do not nor ever have had any students with a visual disability (Carroll et al., 2020). Potential resentment from participants could mar the intent of the training. An array of concerns ranging from the time and location of the event, availability of presenters, adequate preparation, support from administration, and lack of enthusiasm may all factor into the success of the training.

Another potential barrier is identifying presenters who are willing and knowledgeable of the content to deliver the message adequately to participants. A

formative training for faculty should be well planned, rehearsed, and incorporated into the work requirements of any professional (Mokkapadi & Mada, 2018). Program evaluation in education is the systematic way of collection of information on whether the needs of the sessions have been met, and the objectives have been achieved. A good training requires experienced presenters who have taught in this format with success.

Project Implications

Data supported the impact and benefit that the andragogical instructional method can have on adult learners (Adams-Johnson, 2017; Carroll et al., 2020). Knowles (1980) originally defined andragogy as the "art and science of helping adults learn." As a result, marketing and sharing the results to motivate instructors to take advantage of this needed training and to enroll more faculty in courses that offer this instructional strategy may occur. When accomplished, individuals can identify meeting times and locations, inform participants, share the training agenda, and select and identify facilitators for the professional development training (Carroll et al., 2020). Ensuring that all information is shared well in advance to increase the level of participation and to give presenters adequate time to prepare is important

This professional development training aims to increase support for students with visual disabilities to experience the academic opportunities of all students and be treated equitably as a peer. If professional development training is successful, students with visual disabilities will find support from faculty members and staff members, thus feeling more connected to the class and the institution ("A Guide to Visual Disabilities,"

2021). Data from the lived experiences of study participants serve as the existing support needed to move this project forward.

To identify more potential resources and support is also essential. When the professional development training is successfully implemented, it will open the door to future communication to establish engagement and support that can be ongoing. If currently enrolled students with visual disabilities are appreciative of their educational journey at a school, their referrals could enhance the enrollment of other students with visual disabilities.

Section 4: Reflection on the Importance of the Work

This study was conducted to explore if the academic needs of students with visual disabilities were supported when enrolled in higher education in Georgia. All of the participants had visual disabilities but differed in their academic needs. More students with visual disabilities are enrolling in colleges and universities, and generalized accommodations or modifications for students with a disability often do not help those with vision-specific impairment. Unless accommodations or modifications are made to suit the individual needs of each student with a disability, the possibility of omitting necessary supports for specific individuals is high. For this reason, presenting issues of concern and encouraging staff and administrators to reflect upon them may prevent the filing of cases of neglect to fulfill federal responsibilities.

A step toward changing the prevailing cultural view regarding disabilities involves training for administrators and faculty. A welcoming academic culture of acceptance and appreciation of all students, administrators, and faculty will allow for a more positive learning experience for all. Individuals in positions of leadership should review the college or university's policies and their ability to offer adaptive technology to students with a visual disability. Disability services staff should meet with all students with a visual disability to discuss their needs to increase the likelihood of success in their coursework. Every year, disability services staff and faculty should collaborate to support students with a visual disability regarding their adaptive technology needs.

Several educational aids already exist for people with visual disabilities. Their existence, however, does not preclude challenges to implementing them in everyday practice. Section 504 includes no universal standard to which postsecondary educational facilities must adhere. Technology advances faster than legislation, but even then, it is not always accessible in all areas. Some facilities can help students with visual disabilities quite well, while others employ only the bare minimum services and aids to avoid violating the stipulations of Section 504 in their vaguely defined form. A universal standard for an acceptable level of service provision and educational aids, as well as continuous research that maintains and updates such standards over time, would enable students to succeed with greater confidence and less frustration.

Project Strengths and Limitations

By including various aspects of campus life in the study, this project presents a well-rounded campus life for students with visual disabilities. One strength of the current study is its contribution to the literature on implementing disability services in higher education. Technological advances over time drive the move toward greater use of adaptive technology as long as society is attuned to the needs of persons with disabilities.

Despite the efforts of advocacy groups, legislation, and the growing sensitivity of the general population toward people who harbor differences in life, not enough changes have occurred in colleges and universities (Carroll et al., 2020). While many institutions have updated technology in their classrooms, most have not incorporated aides for those with learning limitations. The primary need is for access to adaptive technology and

integration between the school's digital technology and the more common instructional tools available.

One key outcome of this project study was discovering the need for faculty training in the existence and use of various forms of adaptive technologies. The information provided in training seminars will include communication techniques and a review of what communication methods are suitable for students with visual disabilities. Educators might interface with external agencies and organizations to support and promote advocacy with individuals with visual disabilities. Educators may mistakenly believe they already know enough about teaching to overcome any problems students may be experiencing. Other educators may believe that working with students with visual limitations lies within the purview of the Office of Disability Services and is not their concern.

This project illuminates what is needed to improve campus life for students with visual disabilities. It shows that adaptive technologies for visual disabilities are imperative for some students to succeed and have a fair chance in the modern educational institution. Colleges and universities may need to purchase new equipment and teach their students with visual disabilities how to use them. Equipment should be placed in a location that is easy to access, such as a room in the library. Students benefit from the support of disability services and other staff who strive to help them achieve their goals. Personnel from disability services should visit classes to provide technical assistance and informational sessions with all students, staff, and faculty. A visit each semester by

disability services to all classes to discuss differences among students would support the institution with a growing awareness of the needs of others.

Another strength of this study is the diversity of the sample. Participants both had blindness from birth and visual impairments that began later in life. The participants were mature and capable of sharing their experiences with thoughtful reflection. Email was a convenient way for participants to communicate with a researcher. Participants may have felt more comfortable being honest since they were not responding in real-time to a researcher.

The only factor evaluated by this study was visual disability; other secondary conditions affecting learning style or learning capability were excluded. Thus, the data may have ignored other possible barriers to fair and equal access to education not related to visual disabilities. While the scope of this study was limited to visual disabilities, some students with visual disabilities also experience other conditions or issues with learning. For this reason, the focus of the study was on the learning process, not on examining actual academic achievement.

Another limitation was qualification for participation. Recruitment was extended to students with visual disabilities attending one of two institutions of higher learning in Georgia. Some potential candidates may have interpreted the call for participants to exclude them; they may have believed they needed a higher level of disablement to be competent participants. Other potential participants may not have wanted to be singled out for the study because they were anxious or fearful of the experience.

The professional development training was based on the responses of the participants who commented that faculty members were often nice or willing but unable to help in a meaningful way. Other faculty members may have been less amenable to these students because of their own feelings of helplessness. The participants were sought from two schools so that the data would be aligned and less subject to confounding variables. The two schools would share the same services available from the Office of Disability Services. The goal of the training is to inform faculty members of the importance of following the social model of disability as opposed to the medical model of disability.

Because the responses to the questionnaire noted the need for more training of faculty members, the focus of the training is on enhancing teaching processes to include students with visual disabilities on the postsecondary level. The training, involving three days of teaching techniques and attitudes, will be presented through presentation, discussion, and role play, all forms of interactive learning that benefit the learning process of adults (Knowles et al., 2005). The process of learning through interactive means would also set a model for faculty members working with college-level students.

The focus on the training would be on the social model of disability (Oliver, 2005), advocating the approach of honoring the person first. By modeling the social approach to disability, faculty members may begin to recognize this new approach to disability and begin to work with it. Those faculty members already familiar with the social model of disability would be able to share their ideas and possible teaching

approaches with members of their discussion groups. The administrators would gain awareness and sensitivity to the needs of students with visual disabilities and perhaps assist when working with the curriculum, budgeting, and staffing of the postsecondary institution.

Recommendations for Alternative Approaches

Another way to view the problem is to consider the failure of educational administrators to sufficiently budget funds for disability services. The question is whether the omission of adaptive technology and personnel dedicated to supporting students with disabilities is the result of a lack of a federal mandate to do so. Federal bills can be passed, determining that entities must behave in a certain way, but sometimes without providing resources to support the required accommodations (Carroll et al., 2020; Jarwala & Singh, 2019; Jones et al., 2018; Kanter, 2019). The hope is that this professional development training will result in more clarity in understanding the needs of all students with disabilities, but especially those with visual disabilities.

Scholarship, Project Development, Evaluation, and Leadership and Change

During the process of conducting this study, I learned a great deal about people, writing, and the value of data in supporting ideas. With a range of students recently enrolled in a college or a 4-year university nearby, diversity in the sample was more easily obtained. The postsecondary schools were selected because of their geographic location and their proximity to each other. At a community college, when writing a paper, perfection in writing is an illusion. When writing a paper of this length and nature,

continual editing and revision are required to address the expectations and meet the needs of all stakeholders. When researching a topic, the researcher must put aside all personal prejudices and biases as much as possible to be open to new possibilities.

Research is a complicated process involving several factors: reviewing the literature, recruiting participants, timing, collecting data, analyzing data, and considering all of the ethical and moral aspects related to the participants. Data collection should be carefully timed to maximize participation by ideal potential participants. For this study, data collection began during summer break, resulting in a three-month process of recruiting participants. It was necessary to design straightforward, open-ended questions to obtain the information needed to answer the research question.

Participants may need to be encouraged, reminded, and incentivized to complete and submit the questions. I was already familiar with communication systems that individuals with visual disabilities utilize to identify with the participants. My involvement facilitated the research process because participants could identify with me and feel that my interest in this study was authentic. The use of email facilitated communication and enabled participants to share their thoughts freely.

This research and project development has strengthened my personal growth as a scholarly learner and practitioner. My awareness and identity have broadened my understanding of students with visual disabilities in higher education. As a student with a visual disability, I was aware of the importance of advocating for the individual needs

and natural talents of students like myself. Students with visual disabilities deserve to have an equal opportunity—the same as students without a visual disability.

By offering current knowledge in this research, that information can provide faculty and staff in higher education greater insight into the accommodations and adaptive technologies used by students with visual disabilities. Writing a project study on this doctoral journey has resulted in the development of characteristics that contribute to who I am today. During my doctoral journey, I faced some challenges including the passing of my mother. Learning how to manage emotions and time while experiencing such personal life changes has resulted in significant growth on my part.

Any doctoral student would probably agree that one of the most important traits to exercise is patience. The process of gaining approval of a doctoral thesis involves several people who live full lives. For the student, the document is the main issue, and waiting for feedback and approvals from busy people can be most frustrating when time means money. The student also wavers between different sets of expectations, whether the feedback comes from the chair, the second committee member, an outside consultant, or a representative of Walden University's graduate department.

All of the feedback was helpful unless different stakeholders suggested different directions for improvement. The process of writing the project study involved working to clarify any expressions, finding appropriate examples, and relating the material to the literature. This process resulted in a closer identification with the label *doctor*. In doing the work of a doctoral student, I was becoming a doctor.

Reflection on the Importance of the Work

I increased my advocacy skills and became knowledgeable of more resources during the development and finalization of the project study. Finally, pursuing a primary task such as earning a doctorate requires self-discipline, organization, and perseverance. If this research project motivates students with visual disabilities in higher education to follow their dreams and aspirations, they can use their natural talents to make a social impact in society and education. As a practitioner, I would like students with visual disabilities to embrace their self-worth and identity, which was a significant challenge for me to accomplish several years ago. Fortunately, I had supporters who believed in my natural abilities and adequate resources to implement them.

Implications, Applications, and Directions for Future Research

Providing accessible accommodations for students with visual disabilities will have a positive impact on social change at the postsecondary level. By providing faculty with the ideas and means to adapt curriculum and assignments, faculty will be more confident in their ability to modify assignments to incorporate all students in the learning process. The goal is to ensure the social model of disability would be part of the institution's academic culture. Such a change would also ensure administrators would be positively influenced by the needs of individuals with visual disabilities. With the support of administrators and faculty, students with visual disabilities will feel more included and empowered as they are able to acquire status equitable to other students. If adult learners experience the six principles of andragogy, their learning will be more productive and

effective (Knowles, 2005). The advantage of professional development trainings is that educators are able to keep current with changes in the profession, legislation, and best practices. By providing reasonable accommodations, students with visual disabilities have an opportunity to achieve their academic goals successfully and independently. When these goals are accomplished, the students' social, emotional, and cognitive development will grow and strengthen. These positive social changes will allow students with visual disabilities to experience a more positive attitude, feel more competent with regard to completing class assignments, and experience greater self-worth. The students will find their own voice to advocate for themselves and to emphasize their needs to increase their ability to achieve academically.

Some of the empirical implications and applications include ensuring students with visual disabilities have access to the assistive technology that they generally use. Examples include audiotaped or Brailed handouts as well as Braille lab signs and equipment labels or auditory lab warning signals. Also, in the lab, adaptive lab equipment would include talking thermometers and calculators as well as tactile timers, use of talking books, and voice over or speech-enabled devices ("What are Typical Accommodations," 2021). Other common accommodations and one that is certainly cost effective involves verbal descriptions of visual aids in use in the classroom. An important implication would be the need for the faculty member to meet with support staff and the student to ensure the student has access to the resources they need for academic success.

In postsecondary education, faculty members can wield a positive influence for social change. The faculty should attend a professional development training to increase their understanding of how to work with students with visual disabilities. In the training, faculty would learn how to advocate, mentor, and collaborate with administrators and staff to provide individualized accommodations for students with a visual disability. As a mentor, the faculty member might contact the student with a visual disability periodically to support and advise them in assessing, planning, and projecting to help them achieve their academic goals.

When the faculty, administrators, and staff work together, they model a positive academic experience for all students. One step might be using person-first language when discussing individuals with a disability; instead of using “blind students,” faculty, administrators, and staff should say “the students who are blind.”

Administrators serve as positive role models in postsecondary education. Their involvement in students’ academic success is important. By becoming engaged in the students’ academic experience, administrators can create a positive learning environment for students with visual disabilities. Acknowledging and including students with visual disabilities in committees and group activities will also serve as an application of the results of this study. In a professional development training, administrators and staff would also understand how to work with faculty to provide appropriate accommodations for students with visual disabilities.

Offering a professional development training is one major step to assisting faculty members in modifying classroom instruction to accommodate students with a visual disability. One recommendation is to enlarge the study to incorporate not only visual disabilities but also parallel disabilities, such as cognitive, physical, social, emotional, and psychological limitations an individual may experience. This type of training would be more important as more individuals with multiple disabilities enroll in classes. Additional topics for further training include a quantitative study of the actual involvement of disability services personnel during the school year. Yet another interesting study would involve describing the various types of adaptive technology used by students with visual disabilities in higher education and ongoing developments in adaptive technology.

Another recommendation is to conduct a study of the future of digital accessibility and robotic learning, enabling students with visual disabilities to communicate better while in the campus environment. A final recommendation is to conduct a training during the academic year using pointing devices, screen keyboards, and different voice identification systems. The more learned about postsecondary students with visual difficulties, the more wisely institutions can allocate resources.

Conclusion

Students with visual disabilities have many challenges in the contemporary higher education setting. Professional development training established for educational leaders and faculty can mitigate some of these challenges and move institutions toward legally

mandated equality of access. The goal of this project study is that it will be used as a useful learning model for administrators, faculty, and students with visual disabilities in higher education to allow them to achieve success in their academic journey.

Students with visual disabilities deserve the rights to attend a higher education institution with reasonable and accessible accommodations to support their academic goals. In order for the students' goals to be successful, the support of faculty and administrators is greatly needed. Personnel in the Office of Disability Services must assume a major role in supporting and providing accessible accommodations. Often, Disability Services lack education and training that can affect the students' academic success.

I hope this research study can be used as a positive educational tool for institutions of higher education. The research study provides methods for effective communication between students and faculty, strategies for collaborating with disabilities services, and consideration on how students with visual disabilities should be treated as creative thinkers. These students should be considered the experts of their lives and know what is best for completing their educational endeavors. The study involves students with visual disabilities and maintains the importance of ensuring their equal rights in education.

References

Adams-Johnson, S. (2017). A voice teacher's reflections on working with a post-menopausal voice student. *Ubiquity: The Journal of Literature, Literacy, and the Arts, Research Strand, 4*(1), 60-101. http://ed-ubiquity.gsu.edu/wordpress/wp-content/uploads/2017/10/Adams-Johnson_4-1b.pdf

Adams, Anne and Cox, Anna L. (2008). Questionnaires, in-depth interviews and focus groups. In: Cairns, Paul and Cox, Anna L. eds. Research Methods for Human Computer Interaction. Cambridge, UK: Cambridge University Press, pp. 17–34.

Allen, M. (2017). Researcher-participant relationships. In M. Allen (Ed.). *The Safe encyclopedia of communication research methods*, Sage Publications. https://doi.org/10.4135/9781483381411

Altinay, F., Çagiltay, K., Jemni, M., & Altinay, Z. (2016). Guest editorial: Technology support for fostering life-long learning of learners with disabilities. *Journal of Educational Technology & Society, 19*(1), 1-3. https://pdfs.semanticscholar.org/

American Foundation for the Blind. (2019). *Dialing up the magnification: A review of mobile magnifier*. https://www.afb.org/aw/6/6/14561

American Foundation for the Blind. (2020). Statistical snapshots from the American Foundation for the Blind. https://www.afb.org/research-and-initiatives/statistics

Anney, V. N. (2015). Ensuring the quality of the findings of qualitative research: Looking at trustworthiness criteria. *Emerging Trends in Educational Research and Policy Studies, 5*(2), 272-281. http://jeteraps.scholarlinkresearch.com/

Art Beyond Sight. (2020). *Disability and inclusion, Resources for museum studies programs, Social and medical models of disability: Paradigm change*. http://www.artbeyondsight.org/dic/definition-of-disability-paradigm-change-and-ongoing-conversation/

Ashraf, M. M., Hasan, N., Lewis, L., Hasan, M. R., & Ray, P. (2016). A systematic literature review of the application of information communication technology for visually impaired people. *International Journal of Disability Management Research, 11*(18). https://doi.org/10.1017/idm.2016.6

Ball, N. J. M. (2017). *The experiences of severely visually impaired students in higher music education* [Master's thesis, Sibelius Academy, University of the Arts, Helsinki, Finland]. https://helda.helsinki.fi/bitstream/handle/10138/235137/the_experiences_of_severely_visually_impaired_students_in_higher_music_education.pdf?sequence=1&isAllowed=y

Bélisle-Pipon, J. C., Vayena, E., Green, R. C., & Cohen, I. G. (2019). Genetic testing, insurance discrimination and medical research: What the United States can learn from peer countries. *Nature Medicine*, *25*(8), 1198-1204. https://doi.org/10.1038/s41591-019-0534-z

Berghs, M., Atkin, K., Graham, H., Hatton, C., & Thomas, C. (2016, July). Implications for public health research of models and theories of disability: A scoping study and evidence synthesis. (Public Health Research, No. 4.8). *National Institute for*

Health Research Journals Library. https://www.journalslibrary.nihr.ac.uk /search/#/?search=Models%20and%20theories%20of%20disability&sitekit =true&indexname=fullindex&task=search&selected_facets=journal:%22Public% 20Health %20Research%22

Berghs, M., Atkin, K., Hatton, C., & Thomas, C. (2019). Do disabled people need a stronger social model: A social model of human rights? Disability & Society, 34(7-8), 1034-1039. https://doi.org/10.1080/09687599.2019.1619239

Bonet, G., & Walters, B. R. (2016). High impact practices: Student engagement and retention. *The College Student, 15*, 224-235. https://www.projectinnovation.com/college-student-journal.html

Brooks, D. C., & Pomerantz, J. (2017, October). *ECAR study of undergraduate students and information technology*. [Resource document]. EDUCAUSE Center for Analysis and Research. https://library.educause.edu/~/media/files/library/2017 /10/studentitstudy2017.pdf

Bunbury, S. (2019). Unconscious bias and the medical model: How the social model may hold the key to transformative thinking about disability discrimination. *International Journal of Discrimination and the Law*, *19*(1), 26-47. https://doi.org/10.1177/1358229118820742

Burns, W. (2017). The case for case studies in confronting environmental issues. *Case Studies in the Environment, 1*(1), 1-4. https://doi.org/10.1525/cse.2017.sc.burns01

Campbell, C. M. (2017). An inside view: The utility of quantitative observation in understanding college educational experiences. *Journal of College Student Development, 58*(2), 290-299. https://muse.jhu.edu/article/650720

Carroll, J. M., Pattison, E., Muller, C., & Sutton, A. (2020). Barriers to bachelor's degree completion among college students with a disability. *Sociological Perspectives, 63*(5), 809-832. https://doi.org/10.1177/0731121420908896

Centers for Disease Control and Prevention. (2020). *The burden of vision loss.* https://www.cdc.gov/visionhealth/risk/burden.htm

Chamusco, B. G. (2017). Revitalizing the law that "Preceded the Movement" associational discrimination and the Rehabilitation Act of 1973. *The University of Chicago Law Review*, *84*(3), 1285-1324. https://lawreview.uchicago.edu/

Charmaz, K., & Thornberg, R. (2020, June 22). The pursuit of quality in grounded theory. *Qualitative Research in Psychology*, 1. https://www.tandfonline.com/doi/full/10.1080/14780887.2020.1780357

Clark, L., Pett, M. A., Cardell, E. M., Guo, J., & Johnson, E. (2017). Developing a health-related quality-of-life measure for people with intellectual disability. *Intellectual and Developmental Disabilities, 55*(3), 140-153. https://doi.org/10.1352/1934-9556-55.3.140

Clarke, V., & Braun, V. (2018) Using thematic analysis in counselling and psychotherapy research: A critical reflection. *Social Inequalities and Psychological Care, 18*(2), 107-110. *https://onlinelibrary.wiley.com/doi/abs/10.1002/capr.12165*

Correa-Torres, S. M., Conroy, P., Rundle-Kahn, A., & Brown-Ogilvie, T. (2018). Experiences of students who are visually impaired receiving services by Disabilities Support Services (DSS) offices in higher education institutions. *Journal of Blindness Innovation and Research*, *8*(2). https://www.nfb.org/images/nfb/publications/jbir/jbir18/jbir080205.html

Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry and research design: Choosing among five approaches*. Sage Publications.

Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2017, June 5). *Effective teacher professional development*. Learning Policy Institute. https://learningpolicyinstitute.org/product/effective-teacher-professional-development-report

De Cesarei, A., & Baldaro, B. (2015). Doing online research involving university students with disabilities: Methodological issues. *Computers in Human Behavior*, *53*, 374–380. https://doi.org/10.1016/j.chb.2015.07.028

Dedoose. (2018). *Dedoose Version 8.0.35, web application for managing, analyzing, and presenting qualitative and mixed method research data (2018).* SocioCultural Research Consultants, LLC. http://www.dedoose.com

DeBois, S. (2019, March 8). *10 Advantages and disadvantages of questionnaires*. SurveyAnyplace blog. https://surveyanyplace.com/blog/questionnaire-pros-and-cons/

Denzin, N. K., & Lincoln, Y. S. (2017). *The SAGE handbook of qualitative research* (5th ed.). Sage Publications.

Doyle, A. (2021, April 20). *Certificate programs that lead to well-paying jobs.* The Balance Careers. https://www.thebalancecareers.com/certificate-programs-that-lead-to-high-paying-jobs-4171913

Dubois, S. (2015, March 8). *Pro tips to create engaging surveys, quizzes and assessments*. Survey Anyplace. https://surveyanyplace.com/blog/the-key-to-making-surveys-0more-interactive-and-effective/

Edmeades, E. (2018). *How to become a master in the art of public speaking* (Part 1 of 2). [Video]. You Tube. https://www.youtube.com/watch?v=dHAbmoFHqgA

Education, D. R., & Fund, D. (2018). Section 504 of the Rehabilitation Act of 1973.

Ellcessor, E. (2016). *Restricted access: Media, disability, and the politics of participation* (pp. 89-122). New York University Press.

Erickson, W., Lee, C., & von Schrader, S. (2017). *Disability and employment status report for the United States*. Yang-Tan Institute (YTI), Cornell University, Ithaca, NY. http://www.disabilitystatistics.org/

Evers, A., Van der Heijden, B., & Kreijns, K. (2016). Organizational and task factors influencing teachers' professional development at work. *European Journal of Training and Development*, *40*(1), 36-55. https://www.emerald.com/insight/publication/issn/2046-9012

Eyisi, D. (2016). The usefulness of qualitative and quantitative approaches and methods in researching problem-solving ability in science education curriculum EJ1103224. ERIC. https://files.eric.ed.gov/fulltext/=EJ1103224.pdf

Farmer, T., & West, R. (2016). Opportunities and challenges with digital open badges (EJ1110550). ERIC. https://files.eric.ed.gov/fulltext/EJ1110550.pdf

Fell, E. V., & Dyban, M. (2017). Against discrimination: Equality Act 2010 (UK). *The European Proceedings of Social & Behavioural Sciences*, *1*(25), 188-194. https://doi.org/10.15405/epsbs.2017.01.25

Fichten, C. S., Olenik-Shemesh, D., Asuncion, J., Jorgensen. M., & Colwell, C. (2020). Higher education, information and communication technologies and students with disabilities: An overview of the current situation. In J. Seale (Ed.), *Improving accessible digital practices in higher education: Challenges and new practices for inclusion* (pp. 21-44). *Palgrave Pivot*. https://doi.org/10.1007/978-3-030-37125-8_2

Fleming, A. R., Plotner, A. J., & Oertle, K. M. (2017). College students with disabilities: The relationship between student characteristics, the academic environment, and performance. *Journal of Postsecondary Education and Disability*, *30*(3), 209-221.

https://www.ahead.org/professional-resources/publications/jped

Gallego, M., & Busch, C. (2017). Preparing teaching assistants to work with all learners: The impact of accessibility training. *Foreign Language Annals*, *50*(4), 776-792. https://doi.org/10.1111/flan.12305

Georgia State University. (2020). *Perimeter College*. https://perimeter.gsu.edu/

Gilmour, A. F. (2018). Has inclusion gone too far? Weighing its effects on students with disabilities, their peers, and teachers. *Education Next*, *18*(4), 8-17. https://www.educationnext.org/

Gilmour, D., & Wehby, J. H. (2019). Are students with disabilities accessing the curriculum? A meta-analysis of the reading achievement gap between students with and without disabilities. *Exceptional Children*, *85*(3), 329-346. https://doi.org/10.1177/0014402918795830

Gonzalez, I. (2020). *Section 504 of the Rehabilitation Act of 1973: A policy analysis* [Master's thesis, California State University, Northridge]. CSUN ScholarWorks. http://scholarworks.csun.edu/bitstream/handle/10211.3/216224/Gonzalez-Irma-thesis-2020.pdf?sequence=1

Graduate School of Education and Human Development. (2020). *The George Washington University*. https://www.heath.gwu.edu/working-faculty

Guide to Visual Disabilities. (2021, July 26). Affordable Colleges Online. https://www.affordablecollegesonline.org/colleges-helping-blind-partially-sighted-students/

Harry, M. L., Kong, J., MacDonald, L. M., McLuckie, A., Battista, C., Mahoney, E. K., Haesang, J., & Mahoney, K. J. (2016). The long-term effects of participant direction of supports and services for people with disabilities. *Care Management Journals, 17*(1), 2-12. https://doi.org/10.1891/1521-0987.17.1.2

Hennig, N. (2017). Chapter 4: Podcasts in context. *Library Technology Reports of the American Library Association, 53*(2), 30-38. https://journals.ala.org/index.php/ltr/article/view/6232/8115

Hennink, M. M., Kaiser, B. N., & Marconi, V. C. (2016). Code saturation versus meaning saturation: How many interviews are enough? *Qualitative Health Research, 27*(4), 591-608. https://doi.org/10.1177/1049732316665344

Hennink, M. M., Kaiser, B. N., & Weber, M. B. (2019). What influences saturation? Estimating sample sizes in focus group research. *Qualitative Health Research, 29*(10), 1483-1496. https://doi.org/10.1177/1049732318821692

HIE Help Center. (2020). *Assistive and adaptive technologies*. https://hiehelpcenter.org /treatment/assistive-adaptive technologies

How Effective are these Five Teaching Styles? (2015, April 17). *Innova Design Group https://www.innovadesigngroup.co.uk/news/how-effective-are-these-five-teaching-styles/*

Hsieh, G., & Kocielnik, R. (2016, February 27-March 2). *You get who you pay for: The impact of incentives on participation bias*. Paper presented at the ACM

Conference on Computer-Supported Cooperative Work and Social Computing, San Francisco, CA, USA. https://doi.org/10.1145/2818048.2819936

Iowa Department for the Blind. (n.d.). Living with vision loss. https://blind.iowa.gov/

Jarwala, A., & Singh. S. (2019). When disability is a "nuisance": How chronic nuisance ordinances push residents with disabilities out of their homes. *Harvard Civil Rights-Civil Liberties Law Review*, *54*(2), 875-915. https://harvardcrcl.org/wp-content/uploads/sites/10/2019/07/54.2-Jarwala-Singh.pdf

Jones, J. T. R., North, C. S., Vogel-Scibilia, S., Myers, M. F., & Owen, R. R. (2018). Medical licensure questions about mental illness and compliance with the Americans With Disabilities Act. *Journal of the American Academy of Psychiatry and the Law*, *46*(4), 458-471. https://doi.org/10.29158/JAAPL.003789-18

Kadam, R. A. (2017). Informed consent process: A step further towards making it meaningful! *Perspectives in Clinical Research*, *8*(3), 107-112. https://doi.org/10.4103/picr.PICR_147_16

Kanter, A. S. (2019). Let's try again: Why the United States should ratify the United Nations Convention on the rights of people with disabilities. *Touro Law Review*, *35*(1), 301-343. https://digitalcommons.tourolaw.edu/cgi/viewcontent.cgi?article2947&context=lawreview

Khan, A., Khusro, S., Niazi, B., Ahmad, J., Alam, I., & Khan, I. (2020). TetraMail: A usable email client for blind people. *Universal Access in the Information Society*, *19*(1), 113–132. https://doi.org /10.1007/s10209-018-0633-5

Knowles, M. S. (1980). *The modern practice of adult education: From pedagogy to andragogy* (revised and updated). Cambridge Adult Education.

Knowles, M. S., Holton, E. F., & Holton, E. (2005). *The adult learner; The definitive classic in adult education and human resource development*. Elsevier.

Kross, J., & Giust, A. (2019). Elements of research questions in relation to quantitative inquiry. *The Qualitative Report*, *24*(1), 24-30. https://nsuworks.nova.edu/tqr/

Kumar, K. L., & Owston, R. (2016). Evaluating e-learning accessibility by automated and student-centered methods. *Educational Technology, Research and Development*, *64*(2), 263-283. https://doi.org/10.1007/s11423-015-9413-6

Kutscher, E. L., & Tuckwiller, E. D. (2019). Persistence in higher education for students with disabilities: A mixed systematic review. *Journal of Diversity in Higher Education*, *12*(2), 136. https://doi.org/10.1037/dhe0000088

Latham, K. (2018). "Taking a turn for the better": Does recovery from self-reported walking difficulty improve disability and mortality outcomes? *The Journals of Gerontology, Series B: Social Sciences*, *73*(7), 1278–1291. https://doi.org/10.1093/geronb/gbw113

Leedy, P., & Ormrod, J. (2018). *Practical research: Planning and design* (12th ed.). Pearson.

Levitt, J. M. (2017). Exploring how the social model of disabilities can be reinvigorated: In response to Mike Oliver. *Disability & Society, 32*(4), 589-594. https://doi.org/10.1080/09687599.2017.1300390

Liao, H., & Hitchcock, J. (2018). Reported credibility techniques in higher education evaluation studies that use qualitative methods: A research synthesis. *Evaluation and Program Planning, 68*, 157-165. https:/article/abs/pii/S0149718917302410 -https://files.eric.ed.gov/fulltext/=EJ1103224.pdf/

Loeb, S., Dynarski, S., McFarland, D., Morris, P., Reardon, S., & Reber, S. (2017). Descriptive analysis in education: A guide for researchers, National Center for Education Evaluation and Regional Assistance (ED573325). ERIC. https://files.eric.ed.gov/fulltext/ED573325.pdf

Lombardi, A. R., & Lalor, A. R. (2017). Faculty and administrator knowledge and attitudes regarding disability. In E. Kim & K. C. Aquino (Eds.), *Disability as diversity in higher education: Policies and practices to enhance student success* (pp. 107-121). Routledge.

Lourens, H., & Swartz, L. (2016). Experiences of visually impaired students in higher education: Bodily perspectives on inclusive education. *Disability & Society, 31*(2), 240-251. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5130161/

Lumen Learning (2020). *Introduction to Psychology*. https://courses.lumenlearning.com/waymaker-psychology/

Malsch, B., & Salterio, S. E. (2016). "Doing Good Field Research": Assessing the quality of audit field research. *Auditing: A Journal of Practice & Theory*, *35*, 1-22. https://doi.org/10.2308/ajpt-51170

Maharjan, P. (2018, January 13). *Strengths and limitations of interview*. Businesstopia. https://www.businesstopia.net/human-resource/strengths-and-limitations-interview

Mills, M. L. (2017). Invisible disabilities, visible service dogs: The discrimination of service dog handlers. *Disability & Society*, *32*(5), 635-656. https://doi.org/10.1080/09687599.2017.1307718

Mokkapati, A., & Mada, O. (2018, February). Effectiveness of a teacher training workshop: An interventional study. *Journal of Clinical and Diagnostic Research, 12*(2), 9-12. https://doi.org/10.7860/JCDR/2018/30165.11219

Morningstar, M. E., Lombardi, A., Fowler, C. H., & Test, D. W. (2017). A college and career readiness framework for secondary students with disabilities. *Career Development and Transition for Exceptional Individuals*, *40*(2), 79-91. https://doi.org/10.1177/2165143415589926

Moum, T. (1998). Mode of administration and interviewer effects in self-reported symptoms of anxiety and depression. *Social Indicators Research*, *45*(1–3), 279–318. http://doi.org/10.1023/A:1006958100504

Moustakas, C. (1994). *Phenomenological research methods*. Sage Publications.

Muniz, H. (2021, January 16). *The 19 steps to becoming a college professor*. PrepScholar. https://blog.prepscholar.com/how-to-become-a-college-professor-requirements

Mutanga, O., & Walker, M. (2017). Exploration of the academic lives of students with disabilities at South African universities: Lecturers' perspectives. *African Journal of Disability*, *6*, 1-9. https://doi.org/10.4102/ajod.v6i0.316

National Center for College Students with Disabilities (NCCSD). (2020). *Home page*. http://www.nccsdonline.org/

Nielsen, D. (2016). Can everybody read what's posted? Accessibility in the online classroom. In D. Ruefman & A. Scheg (Eds.), *Applied pedagogies: Strategies for online writing instruction* (pp. 90-105). University Press of Colorado. https://doi.org/10.1177/2329490617748690

Office of Civil Rights. (2020, January 10). *Protecting students with disabilities*. U.S. Department of Education. https://www2.ed.gov/about/offices/list/ocr/504faq.html

Oliver, M. (1983). *Social work with disabled people*. Macmillan. https://doi.org/10.1177/026101838400401103

Oliver, M. (2013). The social model of disability: Thirty years on. *Disability & Society*, *28*(7), 1024-1026. https://doi.org/10.1080/09687599.2013.818773

Osborne, T. (2019). Not lazy, not faking: Teaching and learning experiences of university students with disabilities. *Disability & Society*, *34*(2), 228-252. https://doi.org/10.1080/09687599.2018.1515724

Pace, S., Petrini, D., & Pavone, M. (Eds.). (2018). *UNIversal inclusion: Rights and opportunities for students with disabilities in the academic context*. Edizioni. https://www.universalinclusion.co.uk/

Pace, S. (2004). A grounded theory of the flow experiences of Web users. *International Journal of Human - Computer Studies*, *60*(3), 327–363. https://doi-org.ezp.waldenulibrary.org/10.1016/j.ijhcs.2003.08.005

Phelps, P. (2016/2018). *Five fundamentals of faculty development*. *Faculty Focus*. https://www.facultyfocus.com/articles/faculty-development/five-fundamentals-faculty-development/

Pring, J. (2019, March 7). Professor Mike Oliver: Outpouring of admiration for social model pioneer. *Disability News Service, Activism and Campaigning.* https://www.disabilitynewsservice.com/?s=Oliver

Rembis, M. A., Kudick, C. J., & Nielsen, K. E. (Eds.). (2018). *The Oxford handbook of disability history*. Oxford University Press.

Ripley, K. R., Hance, M. A., Kerr, S. A., Brewer, L. E., & Conlon, K. E. (2018). Uninformed consent? The effect of participant characteristics and delivery Format on informed consent. *Ethics & Behavior, 28*(7), 517-543. https://doi.org/10.1080/10508422.2018.1456926

Rodham, K., Fox, F., & Doran, N. (2015). Exploring analytical trustworthiness and the process of reaching consensus in interpretative phenomenological analysis: Lost

in transcription. *International Journal of Social Research Methodology, 18*, 59-71. https://doi.org/10.1080/13645579.2013.852368

Sagiv, L, & Roccas, S. (2017). What personal values are and what they are not: Taking a cross-cultural perspective. In S. Roccas & L. Sagiv, L. (Eds.) *Values and Behavior*. Springer. https://doi.org/10.1007/978-3-319-56352-7_1

Savela, T. (2018). The advantages and disadvantages of quantitative methods in schoolscape research. *Linguistics and Education, 44*, 31-44. https://www.sciencedirect.com/science/article/abs/pii/S0898589817300943

Schwarz, N., & Strack, F. (1991). Context effects in attitude surveys: Applying cognitive theory to social research. *European Review of Social Psychology, 2*, 31-50. https://doi.org/10.1080/14792779143000015

Serra, M., Psarra, S., & O'Brien, J. (2018). Social and physical characterization of urban contexts: Techniques and methods for quantification, classification and purposive sampling. *Urban Planning, 3*(1), 1-17. https://doi.org/10.17645/up.v3i1.1269

Shaheen, N. L., & Lohnes Watulak, S. (2019). Bringing disability into the discussion: Examining technology accessibility as an equity concern in the field of instructional technology. *Journal of Research on Technology in Education, 51*(2), 187-201. https://doi.org/10.1080/15391523.2019.1566037

Sims, S., & Fletcher-Wood, H. (2020). Identifying the characteristics of effective teacher professional development: A critical review. *School Effectiveness and School Improvement, 32*(1), 47-63. https://doi.org/10.1080/09243453.2020.1772841

Singh, D. K. (2019). Educational rights of college students with disabilities. *College Student Journal*, *53*(2), 243-251. https://projectinnovation.com/college-student-journal

Statistics Solutions. (2019). *Qualitative sample size.* https://www.statisticssolutions.com/qualitative-sample-size/

Snider, S. (2021). *A letter from the editor.* Barriers to Education---Disabilities. https://www.bestcolleges.com/research/college-barriers-disabilities/

Stevenson, M., Hedberg, J. G., O'Sullivan, K-A., & Howe, C. (2016). Leading learning: The role of school leaders in supporting continuous professional development. *Professional Development in Education*, *42*(5), 818-835. *https://doi.org/10.1080/19415257.2015.1114507*

Taylor, M. A. (2016). Improving accessibility for students with visual disabilities in the technology-rich classroom. *PS, Political Science & Politics*, *49*(1), 122-127. https://doi.org/10.1017/S1049096515001134

Theobald, R. J., Goldhaber, D. D., Gratz, T. M., & Holden, K. L. (2021). High school English Language Arts teachers and postsecondary outcomes for students with and without disabilities. *Journal of Disability Policy Studies*, *31*(4), 217-229. https://doi.org/10.1177/1044207320919899

Trief, E. (2017). *Guide for college students with visual impairments* (2nd ed.). American Printing House for the Blind.

Tsang, S., Royse, C. F., & Terkawi, A. S. (2017). Guidelines for developing, translating, and validating a questionnaire in perioperative and pain medicine. *Saudi Journal for Anaesthesis, 11*(Suppl 1), S80-S89. https://doi.org/10.4103/sja.SJA_203_17

U.S. Census Bureau. (2017, May 8). School enrollment in the United States: October 2015—detailed tables. https://www.disabled-world.com/disability/education/postsecondary/University of Maine

University of Maine Augusta. (2020). *Teaching students who are blind or low vision.* Faculty Portal. https://mycampus.maine.edu/web/uc-faculty-portal/teaching-students-who-are-blind

Vonglao, P. (2017). Application of fuzzy logic to improve the Likert scale to measure latest variables. *Kasetsart Journal of Social Sciences, 38*(3), 337-344. https://doi.org/10.1016/j.kjss.2017.01.002

What are typical accommodations for students with blindness? (2021, April 9). Do-it. https://www.washington.edu/doit/what-are-typical-accommodations-students-blindness

Willings, C. (2016, March 13). *Accommodations and modifications.* https://www.teachingvisuallyimpaired.com/about.html

Workman, A. M. (2016). *The attitudes of school principals toward the inclusion of students with Autism Spectrum Disorder in the general education setting: Virginia's superintendent's region 7.* [Doctoral dissertation, Virginia Polytechnic Institute and State University]. https://libguides.usc.edu/APA7th/dissertationthesis

World Health Organization. (2020a). *Blindness and vision impairment.* Fact sheet. https://www.who.int/news-room/fact-sheets/detail/blindness-and-visual-impairment

World Health Organization. (2020b). *Blindness and vision impairment.* Overview. https://www.who.int/health-topics/blindness-and-vision-loss#tab=tab_1

Yeo, R. (2017). The deprivation experienced by disabled asylum seekers in the United Kingdom: Symptoms, causes, and possible solutions. *Disability & Society*, *32*(5), 657-677. https://doi.org/10.1080/09687599.2017.1320268

Yssel, N., Pak, N., & Beilke, J. (2016). A door must be opened: Perceptions of students with disabilities in higher education. *International Journal of Disability, Development and Education, 63*(3), 384-394. https://doi.org/10.1080/1034912X.2015.1123232

Zeng, W., & Landmark, L. J. (2017). Self-determination and academic success of students with disabilities in postsecondary education: A review. *Journal of Disability Policy Studies*, *28*(3), 180-189. https://doi.org/10.1177/1044207317739402

Appendix A: Professional Development Training

The Professional Development Training

The Professional Development Training resulted from the findings of the study of 10 students with visual disabilities who were enrolled in two postsecondary institutions selected for the study. The use of professional trainings is consistent with the general pattern found in professions today. Adjunct faculty and variety in scheduling of classes.

The objective of this professional development training is to provide faculty and administrators of postsecondary institutions with resources to support the academic needs of students with visual disabilities. These resources will strengthen faculty's and administrators' understanding of how to collaborate with organizations and services to provide accommodations to strengthen the needs of students with visual disabilities in higher education. The training will include three days of interaction based on the findings of the research study. Because of my visual disability, I will facilitate the training with an assistant in adaptive technology.

Target Audience

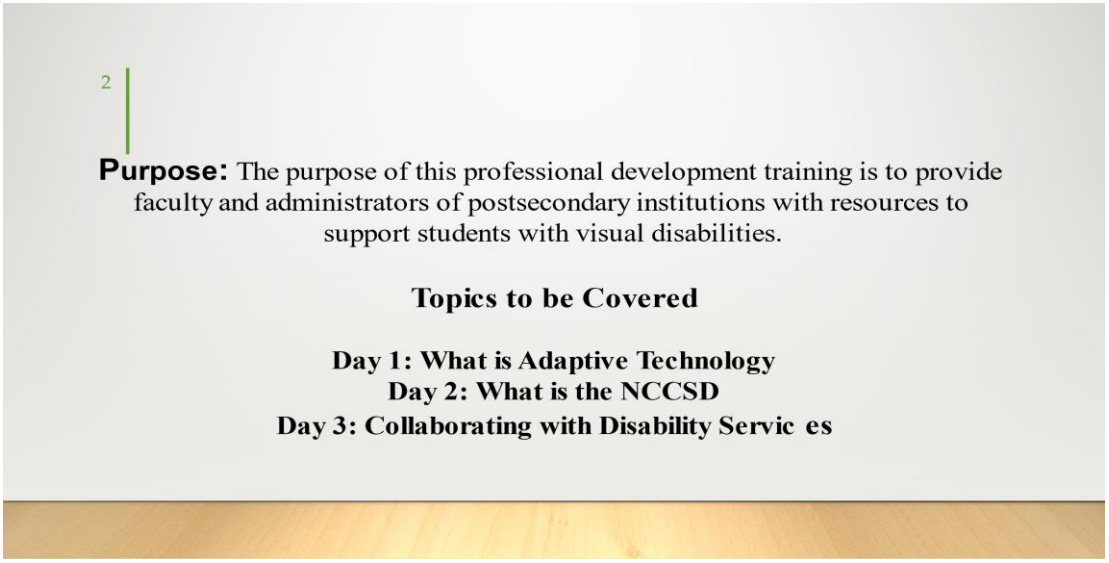
This professional development training was prepared specifically for faculty and administrators working in postsecondary institutions of learning. Anyone would benefit from understanding more about those who live with visual disability. Familiarity with one form of disability would heighten a person's sensitivity to any form of disability. Osborne (2019) noted that cultural and societal attitudes toward people with a disability have changed over the last century, creating great diversity in attitudes and resources.

Slide 1

Day 1 Resources:

Laptop, projector, sign-in sheet, paper, pens, and examples of adaptive technology [20-20 pens, voiceover, recorder, magnifier].

Slide 2



Notes: Overview of Three Days

The goal of the first day's session is to provide the legal reasons and professional rationale for faculty to support the academic needs and goals of postsecondary students with visual disabilities. These objectives for faculty training follow.

1. To define the term visual *disability.*
2. To learn the legal mandates related to the student with a disability who may be enrolled in your course.
3. To review the process for determining if a student has a disability and requires accommodations in your class.

A question-and-answer session will follow.

A key aspect of the first training session includes whether or not faculty know that they have students with visual disabilities in their classrooms. Most often, a student with a disability will exhibit several characteristics over a long period. The Graduate School of Education and Human Development at The George Washington University faculty recommended that faculty follow the following principles with students they suspect of having a disability:

> If a student does not self-disclose having a disability, and you suspect that a student has learning difficulties based on observations and class performance, you can take several courses of action. The first is to contact the office of student disability services and talk to them about your concerns. The staff will ask you to

> discuss your observations and provide suggestions for working with the student. One thing that they will tell you is that it is illegal to ask students to identify themselves to you or to ask for a list of these students in your classes. (Graduate School of Education, 2020, What Should I Do If I Suspect a Student Has a Disability? para. 3)

After taking these steps, an instructor should discuss his/her observations with the student—privately. This meeting should be considered carefully in advance and approached with empathy and understanding. Students who recently developed a disability may be especially hesitant to admit to themselves that they have a problem, making it a potentially sensitive conversation. Instructors should not attempt to diagnose students, but rather to share their observations in a nonjudgmental manner that may encourage the student to seek further help on his/her own; the professor should suggest possible resources on campus that the student may not know about, including the institution's Office of Disability Services.

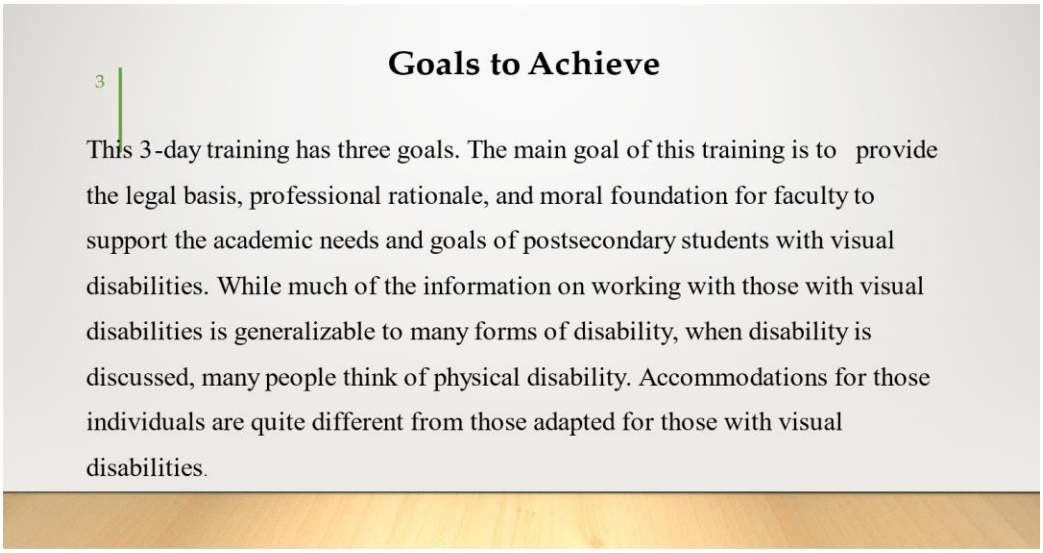
Professors should express confidence in the student's capacity to achieve all of his/her academic and other goals regardless of the existence of a disability. They should "encourage the student to develop the independence and self-advocacy skills that will help in and out of the classroom" (Graduate School of Education and Human Development, 2020, What Should I Do If I Suspect a Student Has a Disability? para. 3). Several questions become important once faculty become aware that a student in their

class has a disability. According to the Graduate School of Education and Human Development at George Washington University, these questions include the following:

1. “What constitutes a disability?
2. What legal mandates are relevant for the student in my course?
3. What are accommodations?
4. How does the student in my class obtain the necessary documentation?
5. What should I do when a student provides documentation of the disability and a request for accommodations?
6. What should I do if I suspect a student has a disability?” (Graduate School of Education and Human Development, 2020, Key Questions)

Faculty will learn the federal laws that protect the rights of students with disabilities in colleges and universities: (a) The Americans with Disabilities Act (ADA) and its amendments, (b) Section 504 of the Rehabilitation Act, and (c) the Higher Education Opportunity Act (HEOA) (Graduate School of Education and Human Development, 2020, What Legal Mandates Are Relevant for Students With Disabilities Enrolled in My Classes? para. 1).

Slide 3



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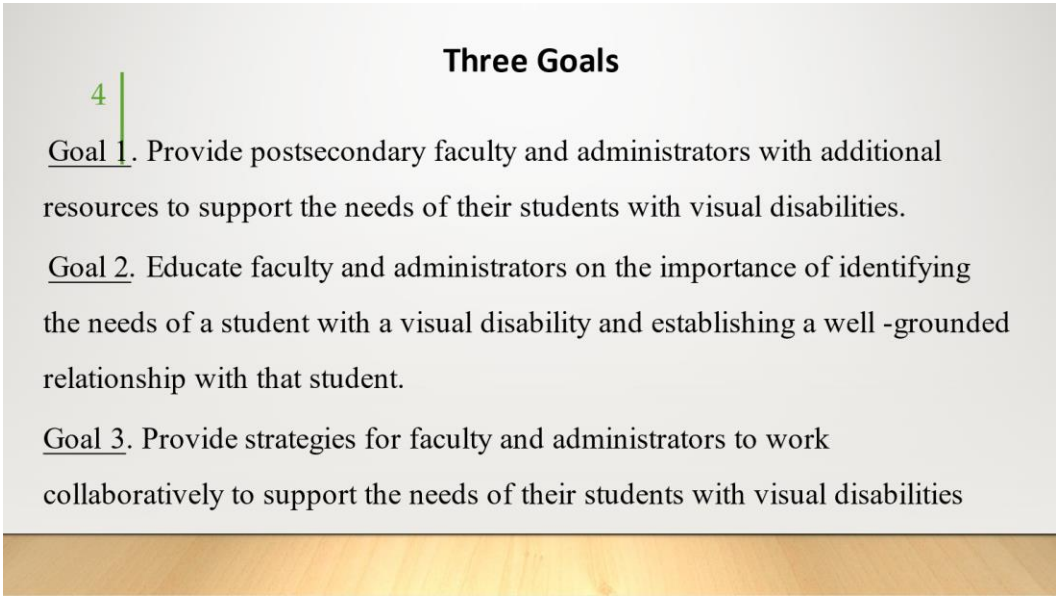


A Script For the 3-Day Professional Development Training: an Overview.

Day 1: What is Adaptive Technology?

Introduction by Facilitator:

The purpose of this professional development training is to provide faculty and administrators of postsecondary institutions with resources to support students with visual disabilities. These resources will strengthen faculty's and administrators' understanding of how to collaborate with organizations and services to provide accommodations to strengthen the needs of students with visual disabilities in higher education. The training will include 3 days of interaction based on the findings of the research study. Because I have a visual disability, an assistant and adaptive technology will serve as accommodations to facilitate the training.

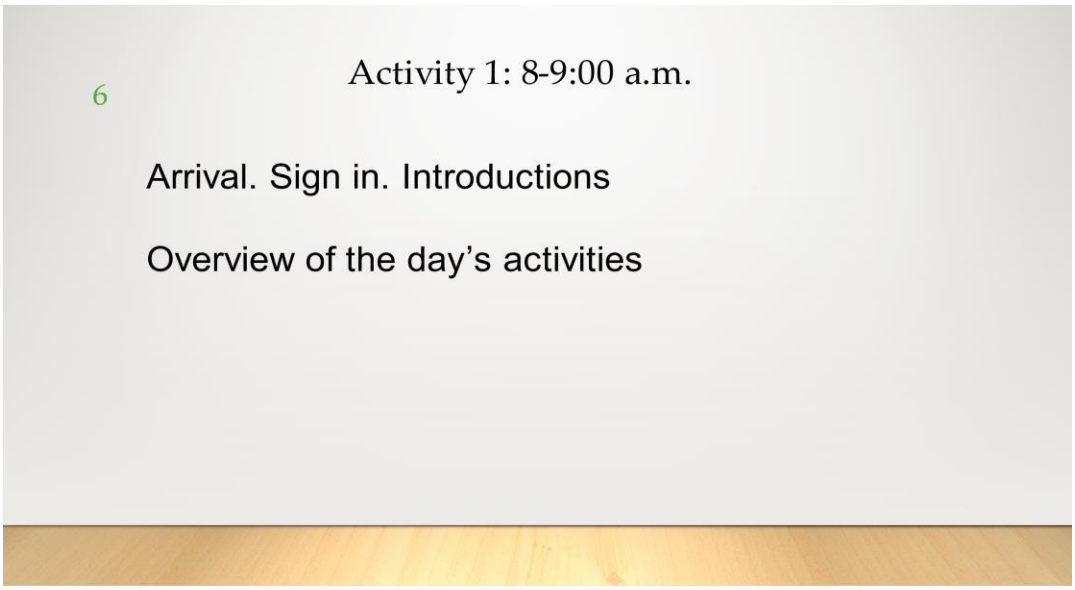
Slide 5

Day 1 Schedule

Day 1 Objective	To strengthen faculty's and administrators' understanding of how to collaborate with organizations and services to provide accommodations to strengthen the needs of students with visual disabilities in higher education.
8:00 -9:00 am	Arrival. Sign in. Introductions.
9:00 -10:00 am	What is adaptive technology? Group discussion and sharing.
10:00 -10:10 am	BREAK
10:10 -11:00 am	Tools for Life: Discussion and activity.
11:00 -12:00 am	Presentation and Practice
12:00 - 1:00 pm	LUNCH
1:00 -2:00 pm	Group collaboration/brainstorming
2:00 - 3:00 pm	Recap of the Day and Reflections.

3

Slide 6



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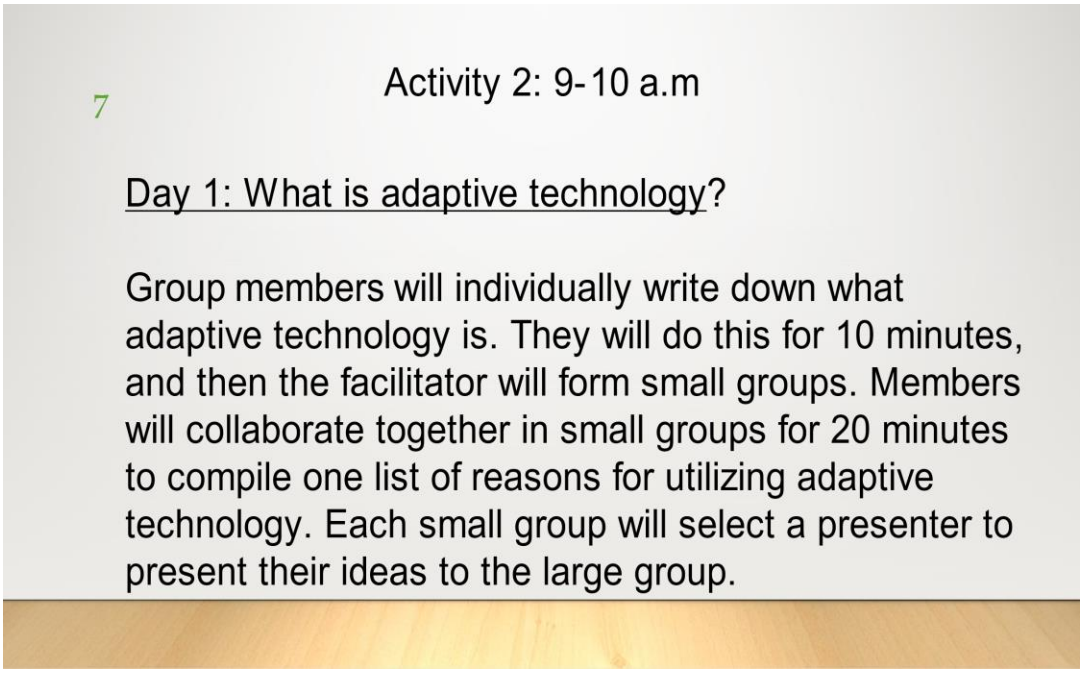

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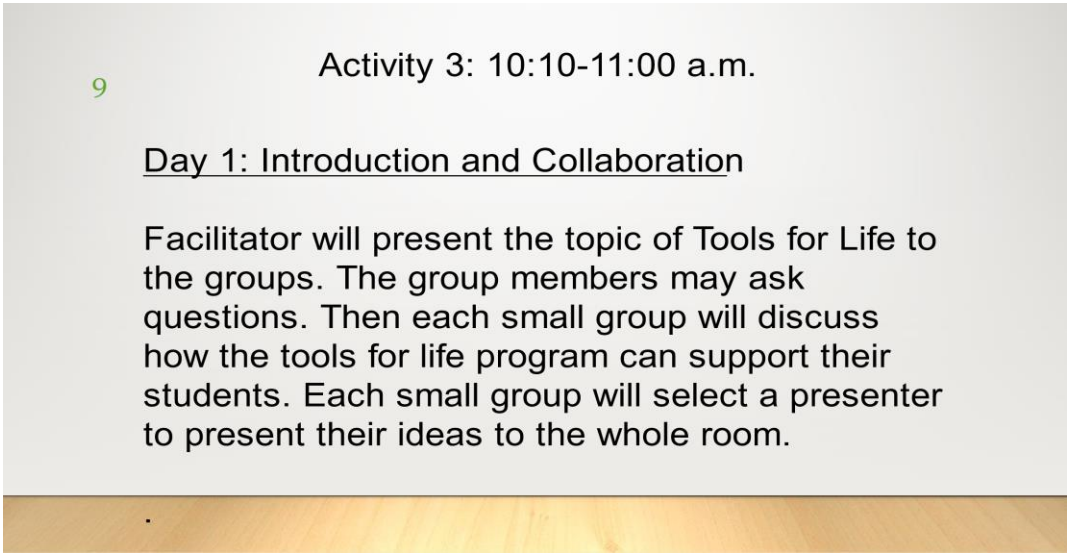


Day 3

The goal of the third day's session is to review with faculty the practical means of adopting and adapting modifications to accommodate students with visual disabilities.

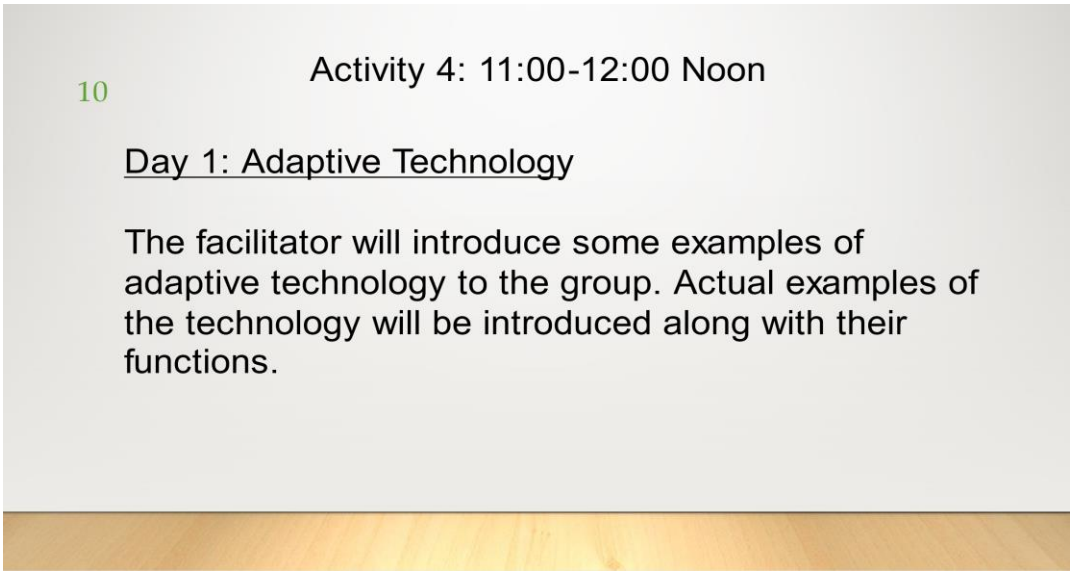
The in-service has two objectives, both in alignment with the overall research question of the study. The two objectives are:

1. To provide an overview of the most frequent accommodations required by a student with a visual disability (Willings, 2016).

2. To determine where you can get more information about students with various disabilities enrolled in a class.

A question-and-answer session will follow.

Slide 10



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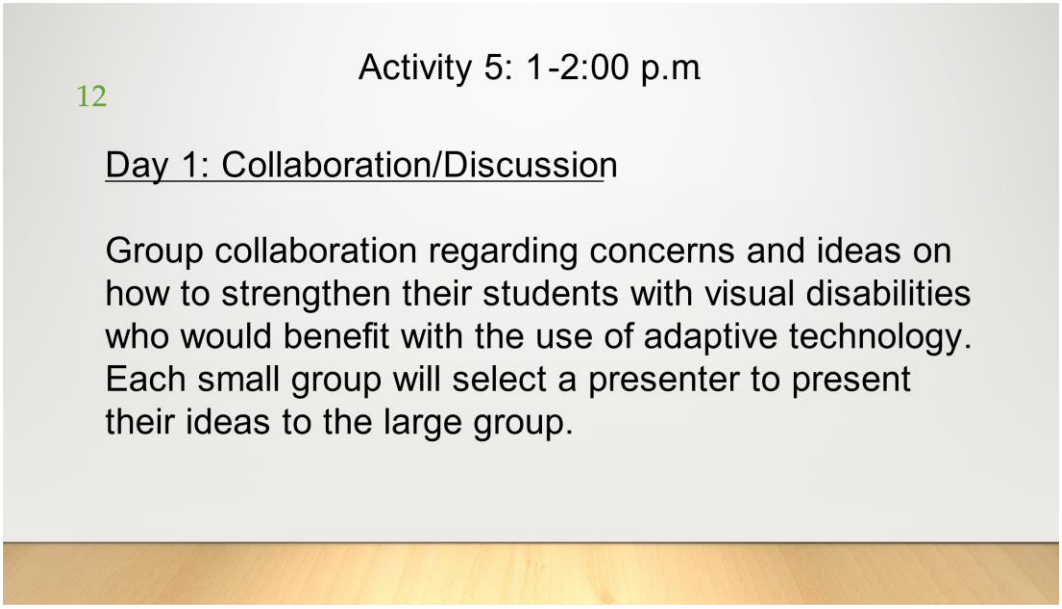

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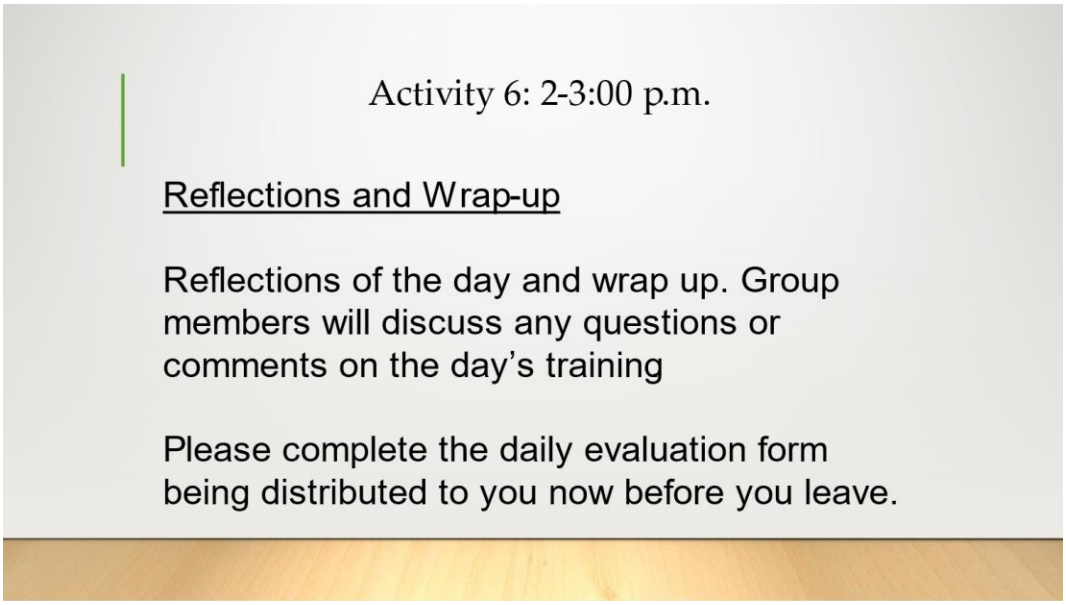

Objective: What is the NCCSD?

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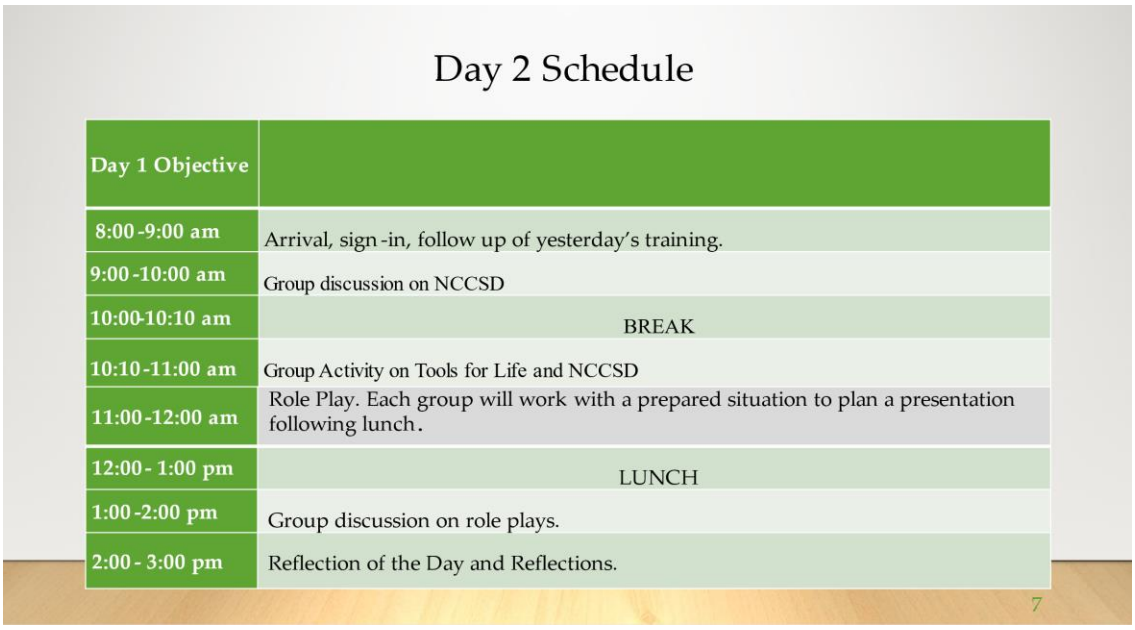

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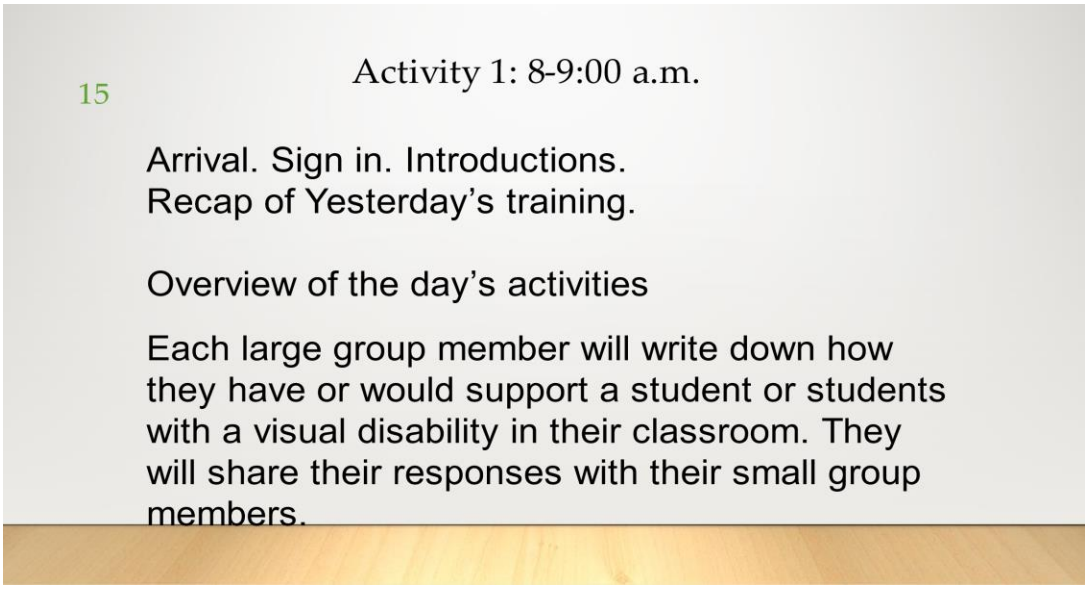


Notes: Day 2

The goal of the second day's session is to educate faculty on the individual needs of students with visual disabilities and their use of adaptive technology. The speakers invited to the second session are representatives from Tools for Life who can present examples of adaptive technology and talk about their use. As moderator, I will discuss the session in advance with these speakers and advise them to adhere to the primary objectives for the session. The in-service has two primary objectives, both in alignment with the overall research question of the study. These are:

1. Define and give examples of accommodations.
2. Become familiar with adaptive technology and how it is used.

A question-and-answer session will follow.

The following instruments are examples of adaptive technology resources to be discussed in the in-service (Negrea, 2019):

Video magnifier. “Enlarges printed or handwritten information on a whiteboard so it is viewable on a student laptop” (Negrea, 2019).

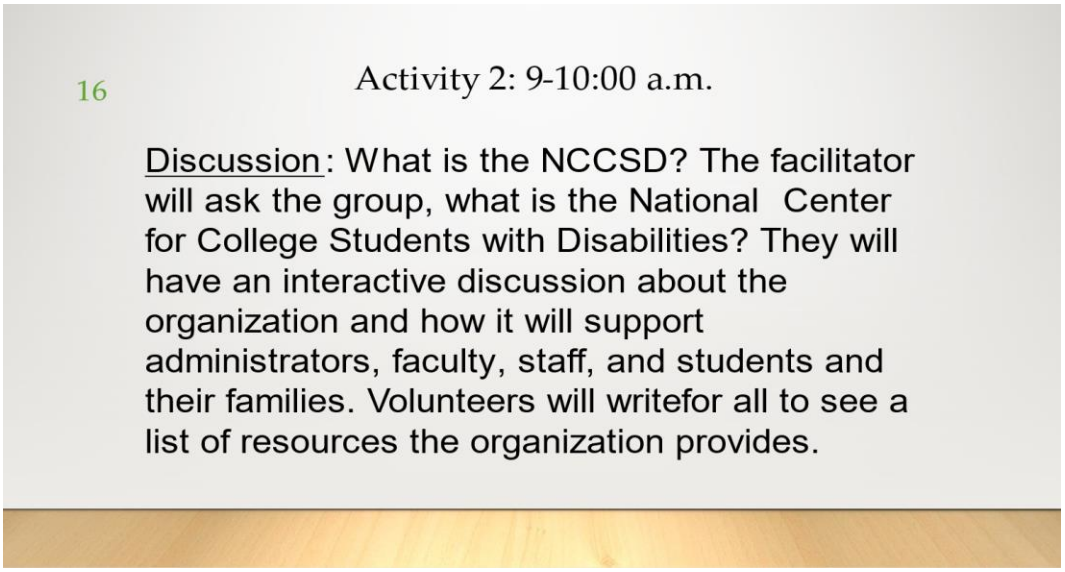
Smart glass technology. “Allows a visually-impaired person, wearing glasses with camera and earphones attached, to be guided around campus by a person off-site” (Negrea, 2019).

Remote captioning. “Provides captioning for lectures and video in real time by a note taker who works off-site” (Negrea, 2019).

Accessibility platform for learning management systems. “Scans content posted by a professor on a [Learning Management System] (LMS) and makes PDFs accessible through text-to-speech software” (Negrea, 2019). Blackboard and Canvas are examples of LMS.

Note-taking software. “Records lectures and turns the audio into color-coded visual blocs.

Slide 16



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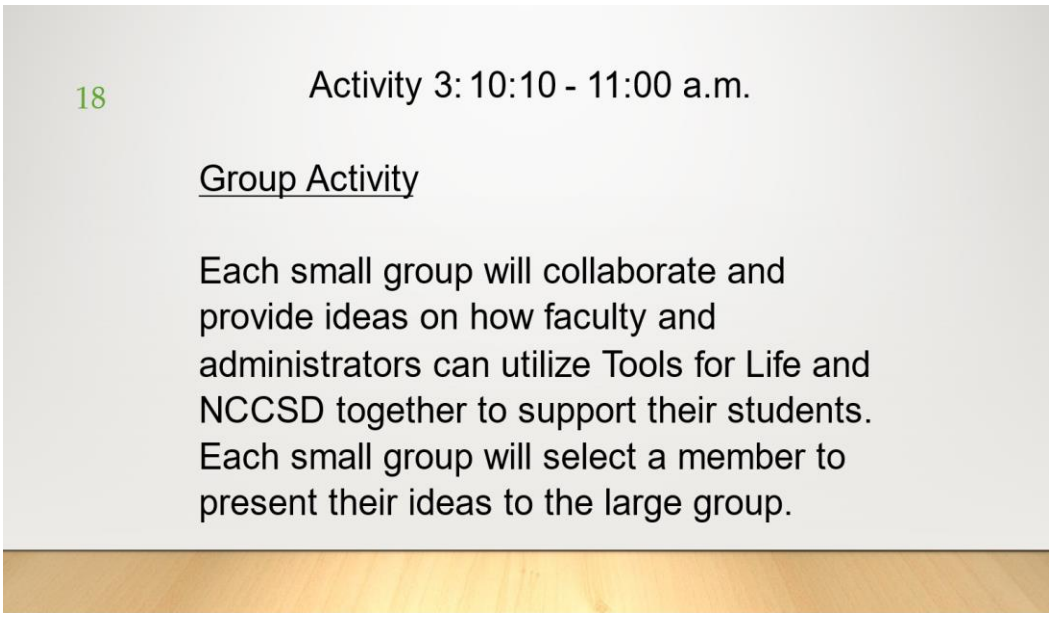

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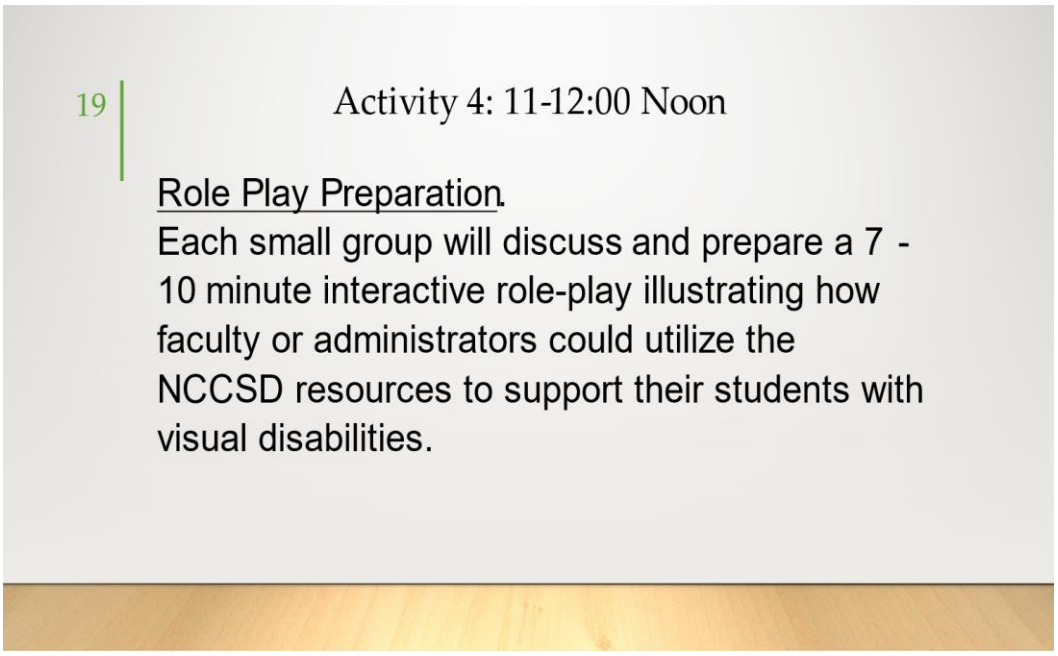

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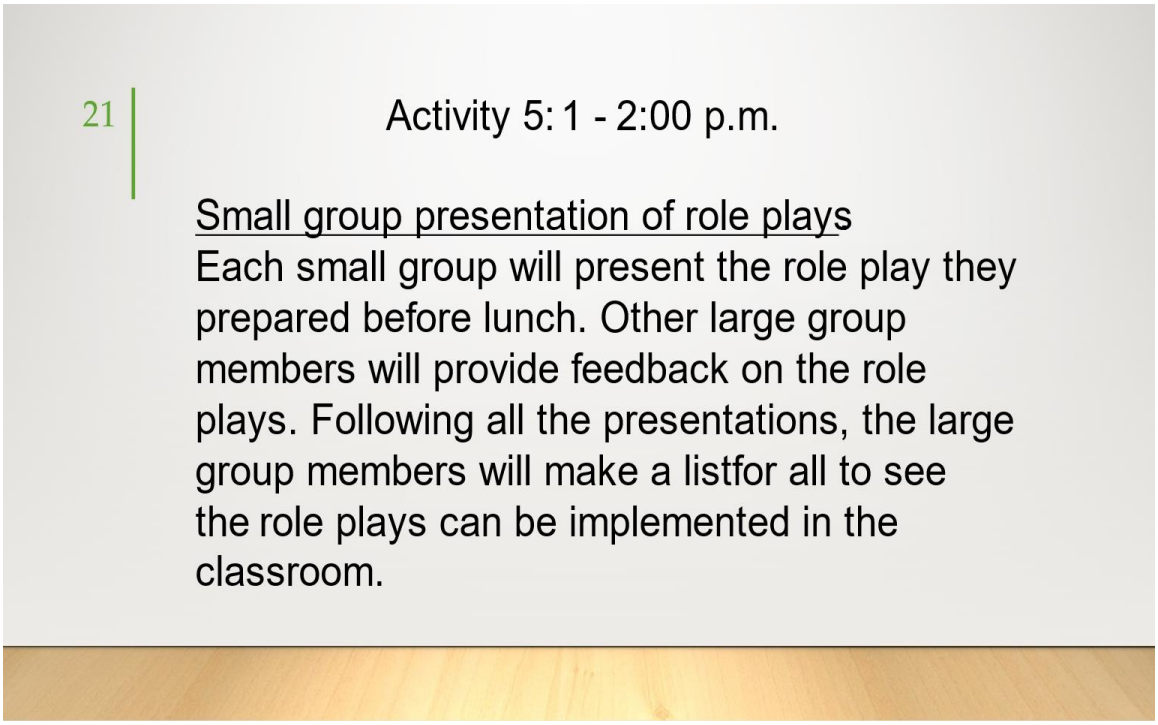
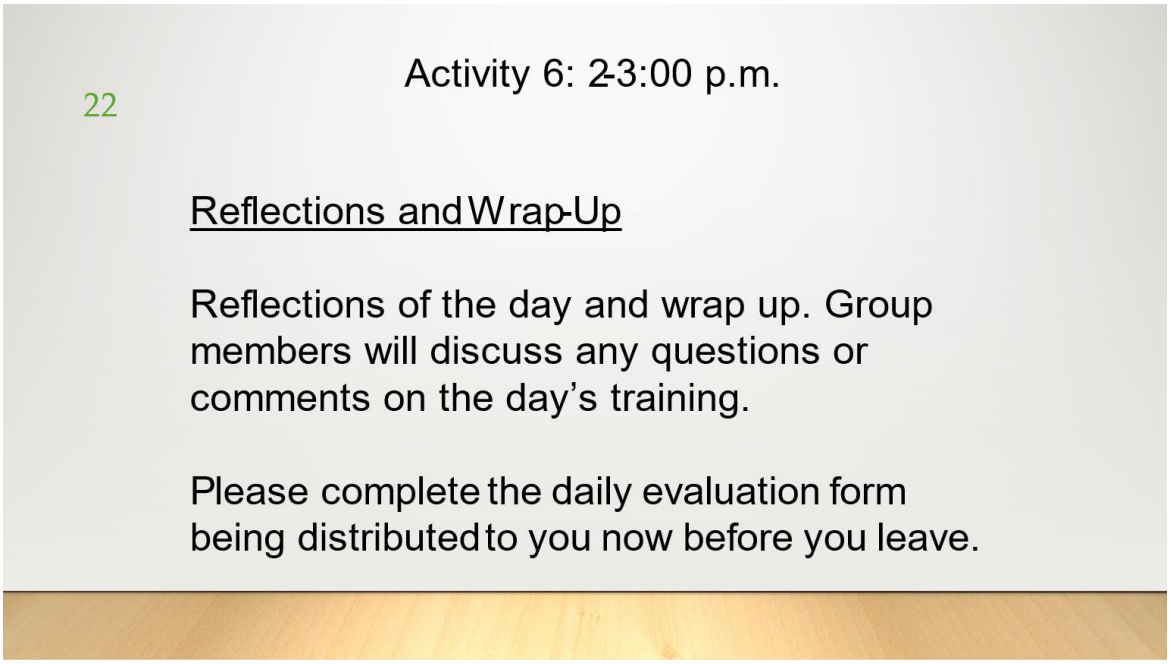
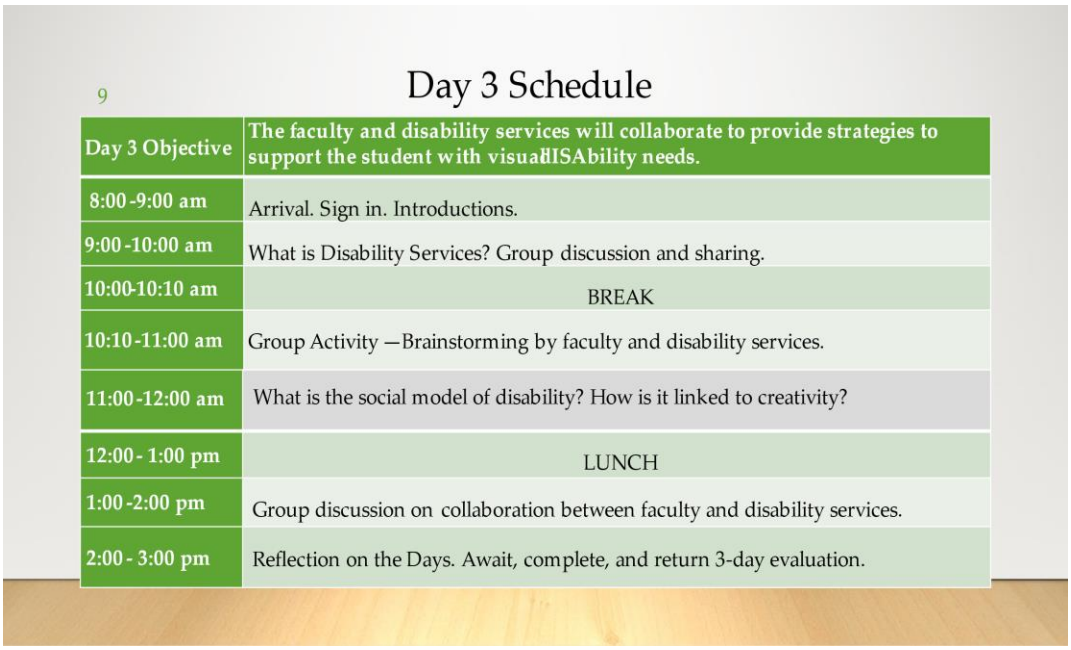

21
Activity 5: 1 - 2:00 p.m.
Small group presentation of role plays
Each small group will present the role play they prepared before lunch. Other large group members will provide feedback on the role plays. Following all the presentations, the large group members will make a listfor all to see the role plays can be implemented in the classroom.

Slide 22


22
Activity 6: 2-3:00 p.m.
Reflections and Wrap-Up
Reflections of the day and wrap up. Group members will discuss any questions or comments on the day's training.
Please complete the daily evaluation form being distributed to you now before you leave.

Objective: Collaborating with Disability Services

Slide 23



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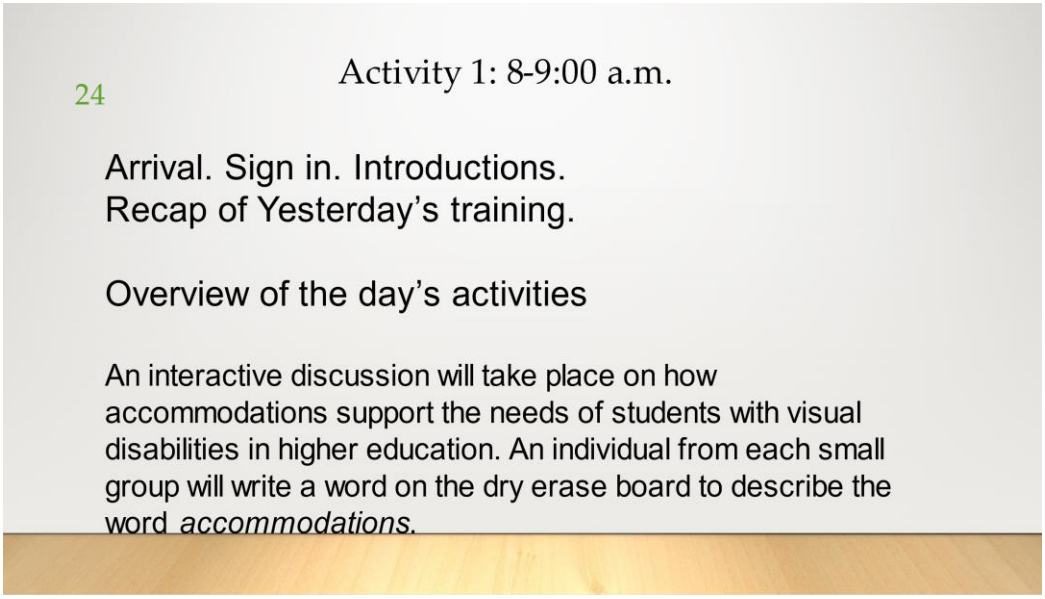

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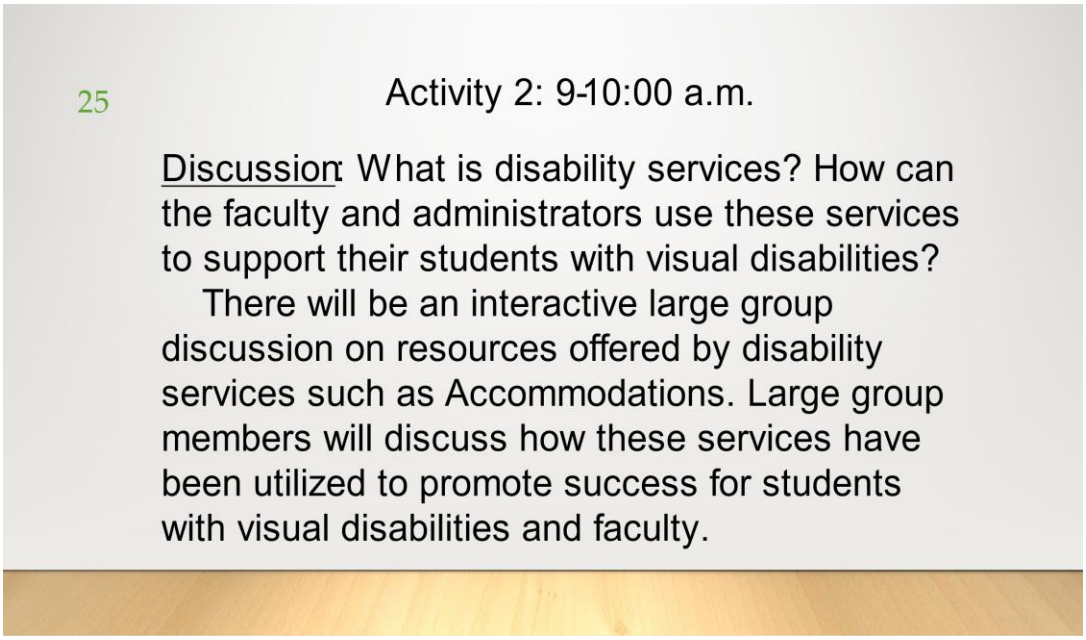

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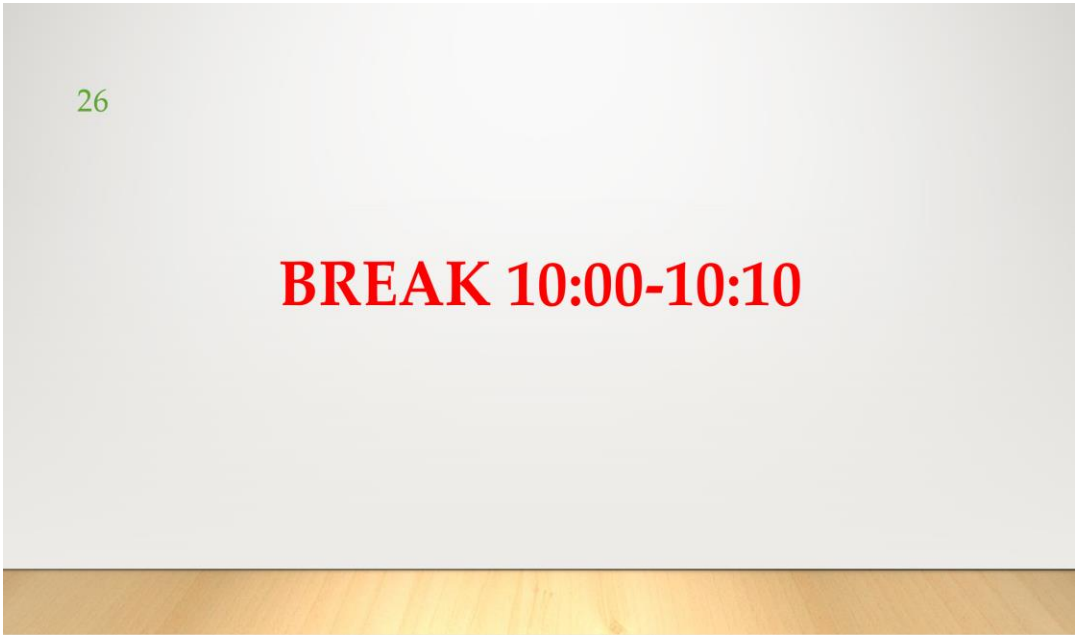

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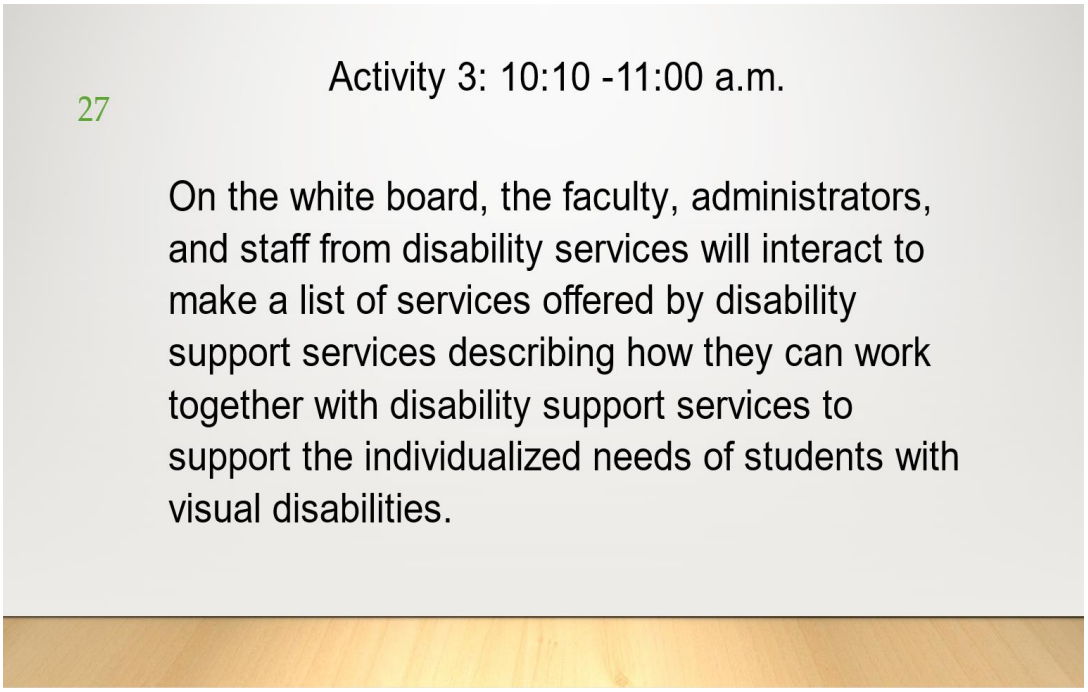

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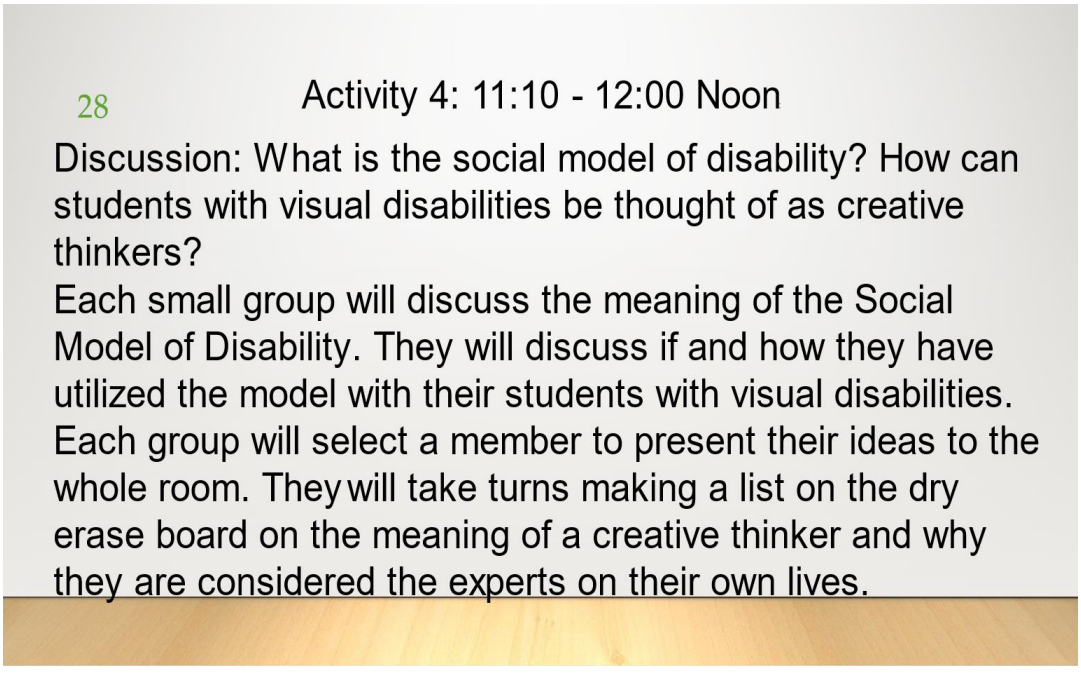

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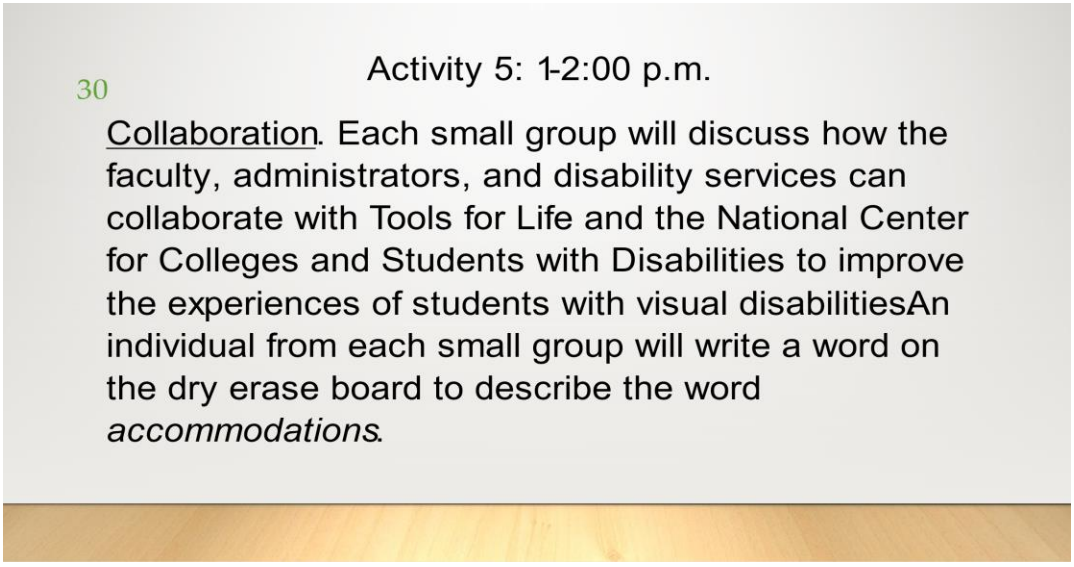
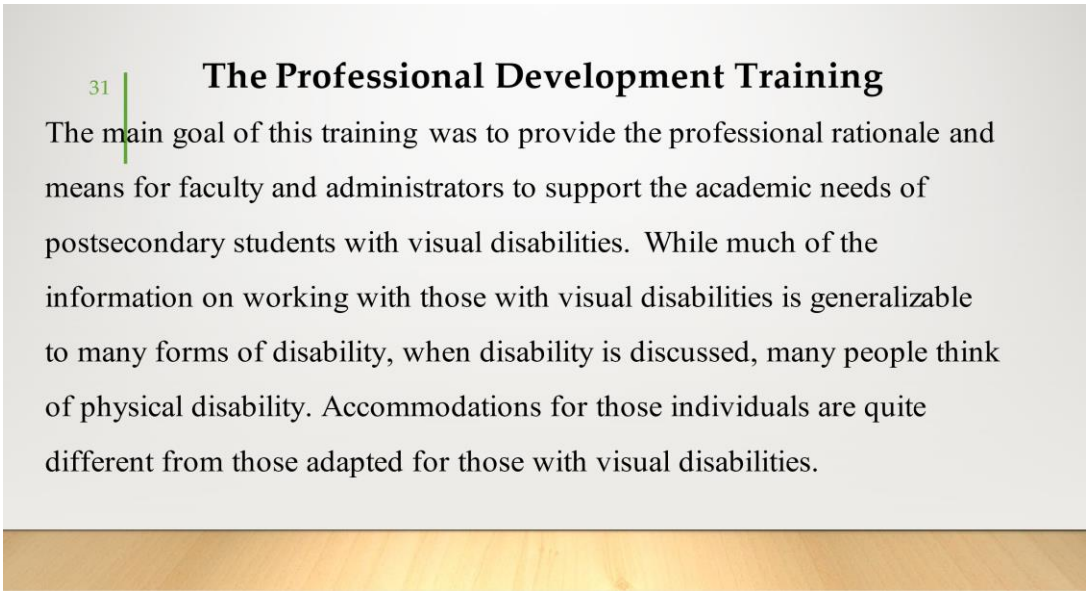
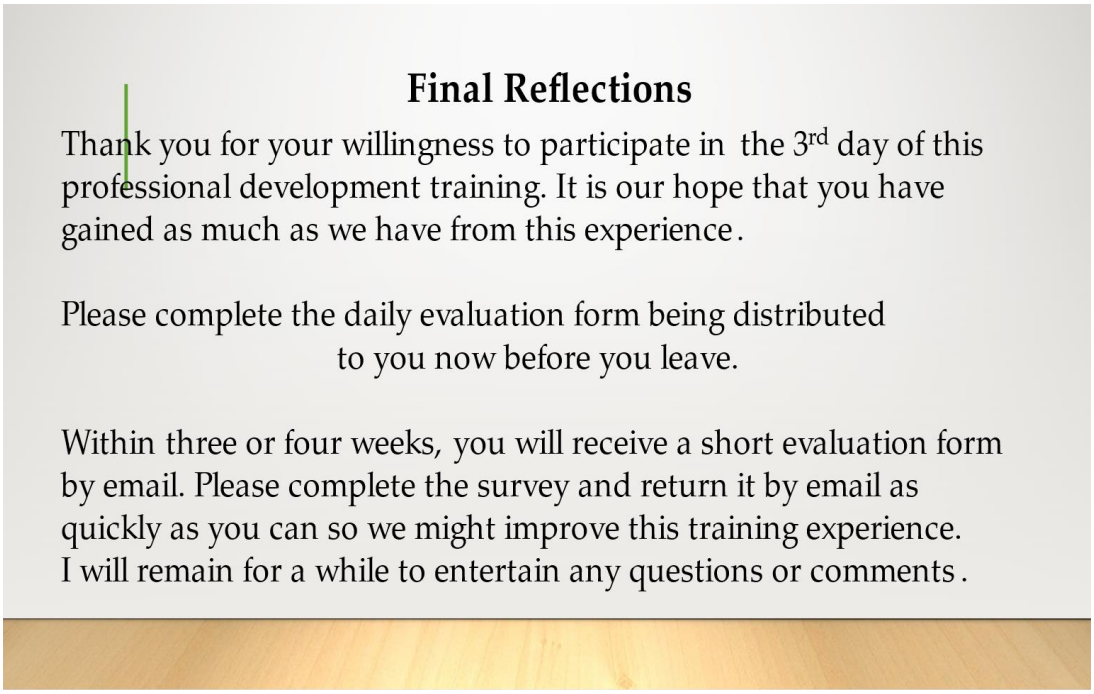


Slide 31



Slide 32



Appendix B: Research Instrument

Demographics

1. What is your age?

( ) 18-20 ( ) 31-40 ( ) 51-60

( ) 21-30 ( ) 41-50 ( ) 61-70+

2. What is your gender? ( ) Male ( ) Female

3. How many years have you been visually impaired? _____

4. What academic institution do you attend? _____

Questions

5. Did or do you utilize any special services at your academic institution such as Disability Services? Yes_____ No_____

   If so, how well did they support your needs?

6. Did or do you use Accessible Technology? Yes _____ No_____

   If yes, what do you use?

7. How accessible is your academic institution's learning platform, i.e., Blackboard?

8. How well do you feel the faculty supported your needs? Or not? In what ways?

9. On a scale of 1 to 10, would you recommend another student with a visual impairment to attend this academic institution? Why or why not?

10. Why is it important for academic institutions to support the needs of individuals with visual disabilities?

Appendix C: Letter of Invitation

April 22, 2019

Dear _____,

My name is Robbie S. Huff. I am a student in the Doctor of Education program at Walden University. I am interested in the academic experiences of students with visual disabilities in higher education and am inviting you to take part in a research study called *College and University Accessibility for Students With Visual Disabilities*. The study aims to find out the academic experiences of students with visual disabilities attending or graduated within the last two years from University A or College B. This study is completely voluntary; you are under no pressure to be involved in this study, and you can withdraw at any point.

I hope to use this information to promote social change and awareness and education on the needs of students with visual disabilities. You will receive an informed consent form with your rights as a participant in a research study along with my contact information so you can contact me at any time. My task is to ensure your privacy and confidentiality with regard to your participation in this study. While you may not gain anything directly from your participation, your response will give administrators and other stakeholders the opportunity to be aware of the current situation with students with visual disabilities and encourage educators to find ways to minimize or eliminate any barriers to academic achievement.

This study will include written questions with 10 students to obtain information about your experiences as a college student with a visual disability. You may respond to the questions in writing via email or via telephone meeting. Either way, you will receive the questions in advance so that you can consider your answers before responding. If you choose not to participate or to withdraw from the study at any time before, during, or after submitting your responses, you can do so without any penalty or loss of benefit to yourself. I will be happy to answer any questions you may have with regard to the research.

Sincerely,

Robbie S. Huff
Doctoral Student, Walden University
404-xxx-xxxx
xxxxxxxxxx@waldenu.edu

Appendix E: Daily Evaluation Forms

Evaluation Form Day 1

This form will allow you to provide us the feedback we need to improve this training. When you are finished, please return the form to the box provided. Thank you for your honesty in your comments or questions.

1. What did you learn about assisting students with visual support that you believe to be quite helpful?

   Explanation of purpose, goals, and overview of the 3-day training._____

   Discussion on adaptive technology._____

   Session on Collaboration with agencies _____

---

2. Which activity was least informative on assisting students with visual support. What would you add, revise, or remove to improve that session?

   Discussion on adaptive technology._____

   Session on Collaboration with agencies _____

---

3. On a scale of 1 to 10 (with 10 being the highest), how would you rate the following aspects of this day of training?

   Facilitator: 1 2 3 4 5 6 7 8 9 10

   Content: 1 2 3 4 5 6 7 8 9 10

   Involvement of Trainees 1 2 3 4 5 6 7 8 9 10

How would you improve this professional development training?

Evaluation Form Day 2

This form will allow you to provide us the feedback we need to improve this training. When you are finished, please return the form to the box provided. Thank you for your honesty in your comments or questions.

4. What did you learn about assisting students with visual disabilities that you believe to be quite helpful?

   Explanation and discussion on NCCSD._____

   Group Discussion preparing Tools for Life and NCCSD role play._____

   Presentation of Role Play with Prepared Situation. _____

5. Which activity was least informative on assisting students with a visual disability. What would you add, revise, or remove to improve that session?

6. On a scale of 1 to 10 (with 10 being the highest), how would you rate the following aspects of this training?

   Facilitator: 1 2 3 4 5 6 7 8 9 10

   Content: 1 2 3 4 5 6 7 8 9 10

   Involvement of Trainees 1 2 3 4 5 6 7 8 9 10

   How would you improve this professional development training?

_____

_____

Evaluation Form Day 3

This form will allow you to provide us the feedback we need to improve this training. When you are finished, please return the form to the box provided. Thank you for your honesty in your comments or questions.

7. What did you learn about assisting students with visual support that you believe to be quite helpful?

   Explanation of purpose, goals, and overview of the 3-day training._____

   Discussion on adaptive technology._____

   Session on Collaboration with agencies ____

_____

_____

_____

8. What would you do, add, or remove to improve the session on assisting students with a visual disability.

_____

_____

_____

9. On a scale of 1 to 10 (with 10 being the highest), how would you rate the following aspects of this training?

Facilitator:	1	2	3	4	5	6	7	8	9	10
Content:	1	2	3	4	5	6	7	8	9	10
Involvement	1	2	3	4	5	6	7	8	9	10

of Trainees

How would you improve this professional development training?

_____

_____

Appendix E: Summary Evaluation Form

This form will allow you to provide us the feedback we need to improve this training. Please write an *X* or check mark next to your selections below. When you are finished, please return the form to the box provided. Thank you for your help.

1. Indicate which days of this training you attended.

   Day 1 ____Day 2 ____ Day 3 ____

2. Which day was most informative on assisting students with a visual disability.

   Day 1 ____Day 2 ____ Day 3 ____

   Why?_____

   _____

3. Which day was least informative on assisting students with visual support.

   Day 1 ____Day 2 ____ Day 3 ____

   Why?_____

   _____

4. On a scale of 1 to 10 (with 10 being the highest), how would you rate the following aspects of this training?

   Facilitator: Day 1 ____Day 2 ____ Day 3 ____

   Content: Day 1 ____Day 2 ____ Day 3 ____

   Involvement of Trainees Day 1 ____Day 2 ____ Day 3 ____

   How would you improve this 3-day professional development training? What would you add, revise, or delete to make this training more effective and interesting?

   _____

_____

_____