

ABSTRACT

MOORE, LEONARD D. Tools of Engagement: The Role of Technology in Promoting Interaction Between College Students with Disabilities and Their Educators (under the direction of Dr. James Bartlett and Dr. Michelle Bartlett).

College students with disabilities face institutional challenges related to pursuing their education. In addition to the developmental changes that occur during young adulthood, these students also must overcome obstacles involving inaccessible environments, programs, services, and instructional approaches. Colleges and other service providers are not handling the transition from high school effectively, creating subsequent education-related problems for individuals with disabilities such as low enrollment, low retention, and low graduation rates. Under the Americans with Disabilities Act (ADA), Colleges and universities are legally mandated to accommodate students with disabilities with technology to address barriers to learning and engaging in their educational experience. Furthermore, with innovations and various forms of technology becoming increasingly popular and available, can students with disabilities use technology to engage educators and inform them of their needs? The following three research endeavors, an integrative review of literature, autoethnography, and digital storytelling project, seek to examine the benefits and barriers associated with the provision of technology on college campuses and highlight the role of narrative in reshaping power dynamics between students and educators regarding technology use.

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Tools of Engagement: The Role of Technology in Promoting Interaction Between College
Students with Disabilities and Their Educators

by

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DEDICATION

To my mother, who taught me the importance of education and the value of serving others. To my family, who nurtured my talents and affirmed me as a scholar. To my friends, who always reminded me of my potential. To my community, who nurtured me and taught me the true meaning of responsibility. To James and Michele Bartlett, who took the time to develop what others so often overlooked. To Tamera Griffin Moore, who believed in me and challenged me to become a better person. And to my obstacles, for giving me the gift of perseverance and informing my life's work.

BIOGRAPHY

Leonard Moore was born and raised in Charleston, South Carolina. Leonard received his bachelor's degree in English/Technical Communications from North Carolina State University in 2000. He later received his teacher certification in 2003. After encountering obstacles in the job market related to his disability, he returned to graduate school to pursue his master's in Rehabilitation Counseling at the University of North Carolina at Chapel Hill. During this time, Leonard developed a broader understanding of the psychosocial aspect of disability along with the viatical and legislative foundation of the disability rights movement. This more comprehensive understanding played a critical role in reshaping his own identity and informing his role as an advocate in others' lives. After graduating in 2009, Leonard has since served as a rehabilitation counselor in South Carolina, North Carolina, and California. In his role, he collaborates with various colleges and universities to help students with disabilities achieve their educational and employment goals. In 2016, he returned to N.C. State to pursue his doctorate in education.

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CHAPTER 1

Introduction

According to the U.S. Bureau of Labor Statistics, the unemployment rate among persons with disabilities as of August 2021 was approximately 10.9 percent, more than twice the national rate (2021). In addition, only 21.6 percent of persons with disabilities eligible to participate in the labor market are employed (Bureau of Labor Statistics, 2021). The National Center for Educational Statistics reports that nearly 14 percent of all public-school students receive special education services (NCES, 2021). Given the legislation that currently exists in education, these numbers suggest that the support these students are mandated to receive does not always translate into gainful employment outcomes once they leave school. Examples of this legislation include the Individuals with Disabilities Education Act (IDEA) and Section 504 of the Rehabilitation Act. IDEA ensures that students with disabilities are granted free and appropriate educational services while Section 504 prohibits the discrimination of students with disabilities in educational programs (U.S. Department of Education, 2021). Under these provisions, K-12 education systems provide students services in a structured and collaborative way that follows them throughout primary and secondary education. Many stakeholders, including teachers, parents, administrators, and support specialists participate in decision-making during this time to ensure schools are providing these services (Agran et al., 2019). However, once students arrive on college campuses, they are often expected to initiate these services independently (Barnard-Brak et al., 2010). In other words, students will not receive the support they deserve unless they disclose their disability and seek services independently. The support they are accustomed to receiving in high school is no longer there once they arrive on a college campus, and they are now responsible for getting services on their own.

The change in support offered between secondary and postsecondary education represents a significant reduction in support for these students as they transition from high school to college (Getzel & Thoma, 2008). While students with disabilities receive a certain level of support in K-12 education, they may not know how to engage educators or the educational system to achieve postsecondary success as this requires a different set of skills as they get older (Pingry O'Neill et al., 2012). College requires that students with disabilities identify themselves and request their need for accommodations, and educators are then legally mandated to provide them with appropriate accommodations. However, educators may not be fully aware of the resources that exist (Cook et al., 2009). In some cases, educators are eager to meet students' needs, but students may not be willing to disclose their disability status. In these cases, educators may not know that a student has a need that is not being met. In other cases, as Shpigelman et al. (2021) asserted, students may not want to be perceived as incapable by asking for additional assistance. These patterns of miscommunication create gaps that can lead to lower academic engagement levels, resulting in low enrollment, retention, and graduation rates among students with disabilities (Shpigelman et al., 2021). These examples point to the larger issue between students with disabilities and their educators that could potentially undermine efforts to support these students. The procedures, processes, policies, and laws for students with disabilities to receive support and services is significantly different for students when they transition from secondary to postsecondary education (Lipka et al., 2020). These changes result in a reduction in support for students with disabilities as they transition from high school to college. Students with disabilities are provided significant resources that support engagement with their educators and the educational system. Once students transition to postsecondary education; however, they may

not know how to independently engage educators or the educational system to ensure they continue receiving the services and support they need to be successful.

Figure 1.1

Transition Model for K-23 Students with Disabilities Entering Post-Secondary Education

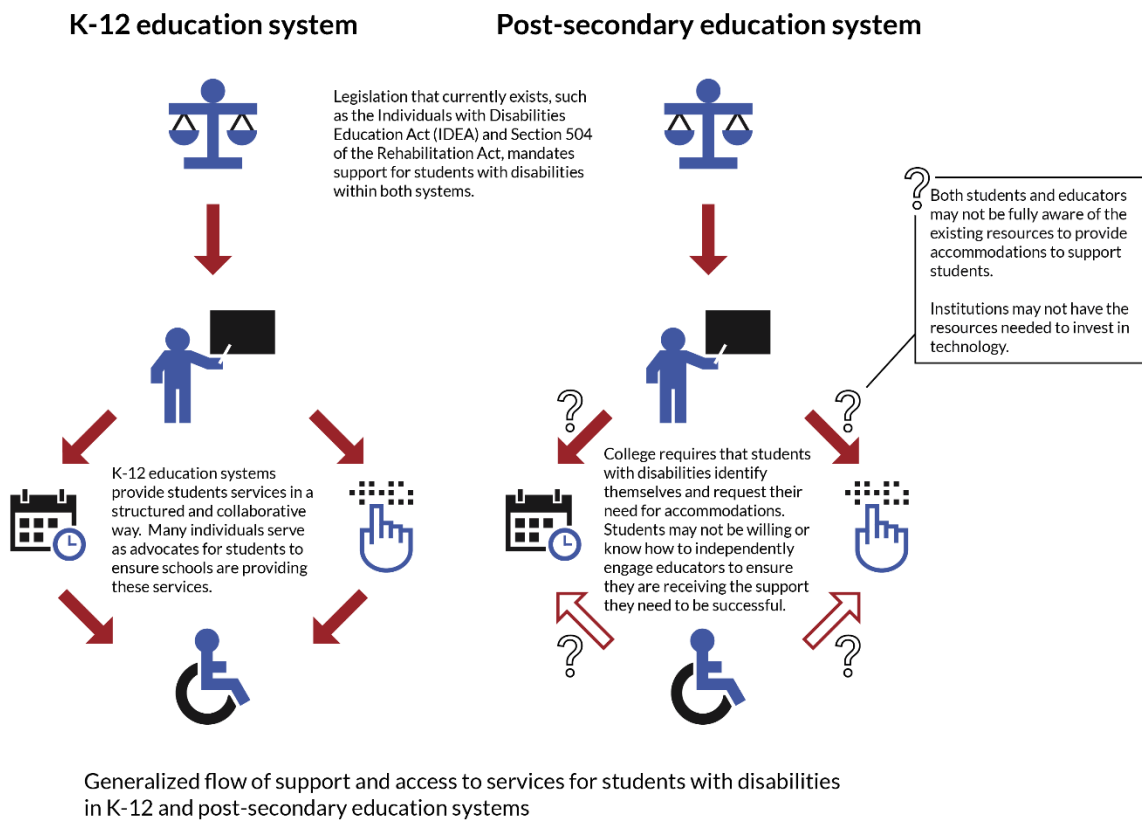


Figure 1.1 above illustrates the drop-off in services for students with disabilities as they leave K-12 education and enter the postsecondary environment. College students with disabilities are expected to navigate several academic services and proactively engage with various academic departments upon arriving on campus (Figure 1.1). This contrasts with their prior

experience in K-12 education, a period in which they are the focus of academic services and supports designed to move them toward achieving their educational goals. During this time, students become accustomed to operating in more structured academic environments and could find the much larger and less familiar setting of a college campus to be overwhelming, leading to feelings of isolation and self-doubt. This could result in lower levels of enrollment and engagement, causing disruption to the transition process.

College requires that students with disabilities request their need for accommodations, and educators are legally mandated to address and meet these needs (Figure 1.1). Both students and educators may not be fully aware of the existing resources to provide accommodations to support students (Figure 1.1). There are many parts of the process that could hinder students in obtaining the services that are needed. Although educators are eager to fulfill the needs of their students, students with disabilities may feel hesitant to disclose their status. In cases where students do not self-identify and the disability is not externally visible, educators are likely to not even know a student has a disability or need that is not being met to support their success as a student. Students might not want to self-identify for a number of reasons including embarrassment, fear of stigmatization, and lack of awareness regarding how their disability impacts them in an educational context (Shpigelman et al., 2021). In some of these cases, students may not want to be perceived as incapable by asking for additional assistance (McNicholl et al., 2019).

In other cases, when students identify, there could be other barriers in providing support. In contrast, colleges and universities may not have the resources needed to invest in technology that may or may not be useful (Ari & Inan, 2010). This lack of communication and sometimes miscommunication patterns can lead to lower academic engagement levels, resulting in low

enrollment, retention, and graduation rates among students with disabilities (Shpigelman et al., 2021). These examples point to the larger issue of a communication gap between students with disabilities and their educators that could potentially undermine efforts to support these students.

Postsecondary students with disabilities are particularly at risk for additional challenges that impact their success. In addition to developmental changes that occur during this time, these students have the extra challenge of learning with limitations (Shpigelman et al., 2021).

Academic expectations are higher at the postsecondary level, and without the proper support, problems can arise and become extremely overwhelming. Though, in some cases, the barriers can be overcome through technology. Technology can be used for students with disabilities to accommodate their needs in an educational context; however, there are significant gaps between students and educators related to both knowledge and access (Shpigelman et al., 2021). The gap in knowledge and access creates subsequent challenges for these students and can impede their ability to transition to adulthood properly and effectively (Shpigelman et al., 2021).

Since individuals with disabilities can use assistive technology to overcome barriers and enhance various aspects of the daily living experience, one can only assume that exposure to this type of technology can translate to education. However, for persons with disabilities, digital forms of technology can serve a dual purpose. Not only can this technology be used to increase functional capacity, but it can also be used as a tool for promoting engagement. Technology, through digital and social media, has become the primary means of communicating with others. Through social media platforms, individuals use photos and videos to tell stories and draw others into their world. Telling these stories allows individuals to carve out their own identity and present themselves as they wish. These stories can be a powerful tool for persons with disabilities, who are often marginalized and stigmatized by society (Shpigelman et al., 2021).

The purpose of these three papers is to examine the potential benefits and barriers for postsecondary students with disabilities as they use technology in higher education and how technology can help them engage others in their educational experience.

Problem Statement

Educational accommodations for students with disabilities are mandated to be provided by colleges and universities. Using assistive technology is one manner these accommodations are being provided. This is in contrast to digital technology that students have already been exposed to such as social media. However, postsecondary students with disabilities are achieving at lower rates than their non-disabled counterparts (Shpigelman et al., 2021). While there are legal support mandating accommodations, there are not equitable outcomes for students with disabilities (Shpigelman et al., 2021). This seems to present an opportunity to improve communication between postsecondary students with disabilities and educators seeking to provide them with academic support (Bausch & Ault, 2012). This problem is significant given that in 2016, it was reported that nearly 20 percent of undergraduate students reported having a disability (National Center for Education Statistics, 2020). The lack of support students with disabilities receive, can lead to lower levels of retention, enrollment rates, and graduation, and exclude large amounts of students from the labor market (Shpigelman et al., 2021). In some cases, barriers students face can be addressed through technology as a form of accommodation. However, educators are not always aware of the resources that exist (Robin, 2008). This lack of services and knowledge of support is ultimately leading to larger rates of unemployment for students. This lack of ability to attain a postsecondary credential then impacts individuals who are not able to lead productive and independent lives due to lack of education and training. Also, colleges and universities are particularly at risk to lose out on large segments of their student

population, further diminishing their role in workforce development. Colleges and universities may find themselves out of compliance with federal guidelines, making them susceptible to legal ramifications. Both students and educators will benefit tremendously from efforts to address the communication gap currently existing, as outlined by this research (Robin, 2008).

Purpose of Articles and Research Questions

The following research paper, weaving together three different projects, aims to investigate strategies that can be used to bridge the gaps between educators and students with disabilities related to the use of technology in higher education. A literature review, methodology, and discussion will follow in each full article. Next, I will briefly outline the structure of each article, including the role of each paper in advancing the central thesis of this paper.

Artifact 1: Integrative Literature Review Article

The integrative review of literature is designed to examine the overall benefits and barriers to technology in the education of college students with disabilities. To understand the role technology plays in academic success, we must examine the specific benefits for students with disabilities. Once the benefits have been established, we must examine the barriers that potentially undermine and impede technology use. The purpose of this paper is to provide a general overview of the overall benefits and obstacles to the provision of technology to college students with disabilities. The following are the research questions for this paper:

1. Based on the extant literature, what are the benefits to technology use for college students with disabilities in higher education?
2. Based on the extant literature, what are the barriers to the provision of technology in college students' education with disabilities?

Artifact 2: Autoethnography Article

The next project, an autoethnography is designed to investigate how technology can be used to promote resilience as demonstrated through my experience as a college and graduate student with a disability. I reflect on my time as an undergraduate, graduate, and doctoral student and how my ability to overcome obstacles and successfully navigate the postsecondary landscape was both limited and enhanced by my understanding of technology. The purpose of the second article is to present a personal narrative about my experience as a college and graduate student with a disability and reflect on how I used technology to overcome my limitations and become more resilient. In this article, I am both the research participant and the researcher. I then organize how technology can facilitate other students' resilience by discussing from my own experiences. Lastly, I reflect on how educators can work more closely with students to improve educational outcomes by effectively using technology. The research question for this article is what my experiences are as a college student with a disability and how I used technology to overcome my limitations and become more resilient.

Artifact 3: Digital Storytelling Video

The subsequent paper discusses a digital storytelling project, designed to translate my personal narrative into a digital and accessible format to tell a story that attempts to encapsulate my experiences as a student with a disability as seen through the lens of others. This project includes accounts from educators, colleagues, family, and friends and illustrates how I have demonstrated resilience over time to achieve educational goals. This project uses various forms of digital media to explore how interactions have informed their perspectives regarding students with disabilities. The narrative supporting the digital story describes and models how a digital story can be used to highlight my experience as a student with a disability. The purpose of this

digital story is to educate and inform postsecondary educators regarding the challenges faced by students with disabilities and how technology can support those challenges, create empathy in educators so they can help to reduce barriers to using technology in support of college students with disabilities to be successful academically, and be used in professional development for university faculty and staff. This artifact includes the digital story along with a guide on how it can be used to enhance the training of postsecondary faculty and staff looking to support college students with disabilities.

Theoretical Framework

Resilience theory was founded by Norman Garmezy in the 1960s and later further developed by Michael Rutter in the late 1970s. Both Garmezy and Rutter were child psychologists looking to understand how children respond and adapt to trauma. While Garmezy focused on resilience as a function of individual attributes, Rutter emphasized that resilience is based on the interaction between the individual and their environment. Garmezy (1991) defined resilience as the capacity for recovery and maintained adaptive behavior following a traumatic or stressful event. However, Rutter (2006) defined resilience as the interaction between risk experiences and relative positive psychological outcomes. While Rutter (2006) credited individual attributes such as personality and temperament, he asserted that the environment contributes largely to the idea of resilience. Rutter supported the belief that one's environment contains both protective and risk factors that contribute to how individuals respond and engage their circumstances. Protective factors can include socioeconomic status, family support, and access to opportunity, while risk factors include traumatic or negative experiences that cause emotional distress. The individual mediates the circumstances involved with their environment; however, individual responses to their environment can vary depending on biological and

psychological differences (Rutter, 2006). Rutter endorsed a lifespan approach to resilience, arguing that resilience manifests itself at various times in life. He believed that resilience was mainly contextual, having more to do with exposure to resources at a particular point in time (Rutter, 2007).

Significance of Research

Research shows that students with disabilities are engaging in postsecondary education at lower rates than their non-disabled counterparts, despite the fact that current legislation mandates that these students are provided with academic support (Shpigelman et al., 2021). The studies conducted in this dissertation are relevant to the discussion on developing strategies to improve academic engagement and student success among college students with disabilities. The first study, an integrative literature review provides a general overview of the benefits and barriers to the provision of technology for students with disabilities in higher education. This piece is important to not only understand the benefits but also, understand what blocks these benefits for students that need these to be successful. The second study, an autoethnography, focuses on how technology can facilitate resilience in a college student with a disability. This study is important to share how I, a Black male with visual and auditory disabilities, navigated higher education by using technology to support my learning and build resilience in order to complete postsecondary education, leading to a positive labor market outcome. Harris (2021) points to research on intersectionality that indicates that race and disability are not distinct from one another. A dual analysis is recommended that views the two as interconnected in a way that validates and reinforces one another. Since disability has historically been used to deny rights to Black Americans, these individuals have become reluctant to identify themselves as disabled, particularly in contexts such as education (Harris, 2021). The third part of my dissertation

includes a multimedia project demonstrating how technology can be used by a student with a disability to inform educators of challenges they may face and how this can best be addressed through technology

Summary

This dissertation consists of three parts including an integrative literature review, an autoethnography, and a digital storytelling project. The integrative literature review examines potential benefits and barriers to technology use for students with disabilities in higher education. The autoethnography chronicles my experience with the benefits and barriers as I learned to successfully navigate the postsecondary landscape. Finally, the digital storytelling project converts these experiences into a digital format to demonstrate how technology can be used to inform and educate others. This paper aims to investigate the need for strategies that can be used to facilitate interaction and communication between college students with disabilities and their educators to improve student success and build resilience.

CHAPTER 2

ARTIFACT 1: Integrative Literature Review Article

Benefits and Barriers to Supporting Technology Use Among College Students with Disabilities: An Integrative Review

Postsecondary students with disabilities are at risk academically given the numerous challenges they face (Mahoney & Hall, 2017). These students have the task of learning in environments with barriers to their access. Expectations are higher at the postsecondary level, and without the proper support, problems can arise and become extremely overwhelming. In many cases, these problems can be overcome through technology. For students with disabilities, technology can be used to accommodate their needs in an educational context; however, there are questions that exist for both students and educators in the areas of exposure and access to technology. If not properly addressed, this can create subsequent problems for these students throughout their time in postsecondary education. Current research points to both the benefits to technology use within academic environments as well as the barriers that exist in the provision of technology for these students. This chapter seeks to provide a review of the literature on the benefits and barriers to technology in postsecondary education for students with disabilities.

Research Questions

The research questions I pose seek to address the various technological benefits and barriers students with disabilities face in the context of education are:

1. What does the extant literature report are the benefits of technology in the education of postsecondary students with disabilities?
2. What does the extant literature report are barriers in the provision of technology for postsecondary students with disabilities?

Methodology

According to Toracco (2016), there are five distinct goals and purposes of an integrative literature review: to review, update, and critique the literature, to conduct meta-analysis, to review, critique and synthesize the literature, to reconceptualize the literature, and to answer specific questions. This integrative literature review analyzes existing research related to this topic to establish a clearer understanding of how technology can be used to enhance the academic experiences of students with disabilities and examine the potential obstacles that exist in providing these services to students. These benefits and barriers were organized based on concepts and themes that emerged from the readings. Benefits included increased academic performance, increased technological competency, and improved social functioning. Barriers included lack of institutional support, lack of personnel training, and limited access to resources. The findings of this integrative literature review can be useful to educators, practitioners, administrators, and others looking to improve educational outcomes for students with disabilities.

Data Collection

As informed by Toracco (2016), The data collection for obtaining relevant studies included the following steps:

1. Online search for articles using various combinations of the following terms:
postsecondary education, students with disabilities, assistive technology, technology, college students, communications, access, and accommodations.
2. Results were obtained primarily using the ERIC database from the online library at North Carolina State University.
3. Additional articles were included from Google Scholar using the above search terms.

4. Search results yielded a maximum of 1,071 articles.
5. These articles were narrowed down based on title, relevance, and response to research questions.
6. The remaining 30 articles were then categorized based on specific benefits and/or barriers for both educators and students with disabilities.
7. Articles were limited to research from the previous 10-20 years to remain current.

Data Analysis

Based on the approach outlined by Toracco (2016), retained articles were read in their entirety. Repetitive concepts and themes were identified regarding accessibility and technology in the education of students with various disabilities including physical, cognitive, sensory, and developmental impairments. To further analyze the data (Toracco, 2016), international articles were included that could offer implications for postsecondary students in the U.S., as well as articles from the K-12 population since many students with disabilities often begin receiving educational support and services at a young age that follow them into their postsecondary training. Notes were compiled and organized based on relevance to the research questions. Findings were then organized into categories of benefits and barriers based on similarities and related themes. This was done in an attempt to reconceptualize the data and answer specific questions (Toracco, 2016).

Findings

Findings to address research question 1, What does the extant literature report are the benefits of technology in the education of postsecondary students with disabilities, is found in benefits below. Benefits include improved academic performance, increase competency, and improved social functioning.

Benefit #1: Improved Academic Performance

In this section, I reviewed existing research on technology resulting in improved academic performance for students with disabilities. This includes areas such as reading comprehension, composition skills, and content construction.

Reading Comprehension. Wood et al. (2018) set out to determine if “read aloud” technology actually improves reading comprehension for students with reading disabilities by conducting a meta-analysis using 43 articles on “read aloud” and reading comprehension. “Read aloud” technology is an assistive technology that reads digital text aloud for the reader to hear. The research found that auditory presentation of text was an effective method for improving reading comprehension in these students. Floyd & Judge (2012) discussed how technology can be used to improve reading skills in a study of six college students with learning disabilities using a portable reading device known as the ClassMate Reader. Each student was given a reading assignment along with a brief test to measure reading comprehension skills. After the test, the students were interviewed regarding their experience. Results indicated that the ClassMate Reader was a tool that could be used to improve reading comprehension. Mahoney & Hall (2017) outlined examples of resources that can be used to help students with disabilities improve reading comprehension skills. This includes technology known as Newsela, which allows students with learning difficulties to read articles related to various academic topics. Students were able to use this tool to select the reading level for articles and process them at their level of comprehension (Mahoney & Hall, 2017). Bookshare is an online library created for students with print disabilities, such as visual impairments and learning disabilities. Through this site, students were able to have books read aloud, enlarged, highlighted, and/or translated into Braille (Mahoney & Hall, 2017). Screencast-O-Matic is a tool that can be used by educators to

record short videos regarding reading assignments that can later be viewed by students. This allows students to engage with instructors in a non-written format in the event they have difficulty with reading. Students are able to upload and return videos to ask questions and assess their level of comprehension (Mahoney & Hall, 2017).

Composition Skills. Nearly 33 percent of students with disabilities in public education have some form of learning disability (NCES, 2021). For these students, basic areas in writing such as spelling, grammar, and mechanics can create extreme difficulty. Nelson & Reynolds (2015) examined the effectiveness of technology known as speech recognition software, which allows students who have difficulties in writing to dictate sentences that are then translated into text. Participants were given speech recognition software known as Dragon Naturally Speaking to complete a series of writing assignments. Results found that the software significantly reduced frustrations regarding the writing process for all users (Nelson & Reynolds, 2015). Mahoney & Hall (2017) also provided examples of technology that can be used to assist students with disabilities in the area of composition such as Bubbl.us, which allows teachers to assist students with generating ideas during the planning stages of writing assignments. With this site, students are able to create a visual map for their ideas, making it easier for them to make connections in a way that may be difficult in a written format (Mahoney & Hall, 2017). Evmenova & Regan (2019) further elaborated on how technology can be used to support the writing process for students with disabilities. Their research examined the effectiveness of technology and how it can be used to address persisting through various stages of the writing process and concludes that technology such as graphic organizers, speech recognition, and word prediction software improve the quality of student writing (Evmenova & Regan, 2019).

Content Construction. Badge, Dawson, Cann, & Scott (2008) discussed how technology can be used by students with disabilities to construct and create educational content such as slideshows and presentations. Their research compared three different resources used to create multimedia presentations (Flash, Adobe Presenter, and Impatica). The products were tested using a group of 20 undergraduate students (10 with disabilities and 10 without). Results found that the students with disabilities proved to be more proficient in their ability to utilize the features and navigate the technology with the proper training. Mahoney & Hall (2017) also recommended a tool known as Padlet that can be used by students in the creation of educational content. Padlet allows students to work collaboratively on an assignment by providing them with a blank document that can be shared among students. Students are able to share their ideas while creating and editing content as they move toward a finished product. This is especially helpful for students with disabilities; enabling them to work with their non-disabled counterparts on assignments without bringing attention to their limitations (Mahoney & Hall, 2017).

For students with disabilities, technology can help to compensate for their limitations and minimize challenges. This makes the consumption of academic content more manageable and accessible. As technology continues to develop, students with disabilities are given increased opportunities for academic success.

Benefit #2: Increased Competency

In this section, I reviewed existing research on technology resulting in increased competency for students with disabilities. This section emphasizes the importance of digital literacy skills in helping these students to better navigate technology that will be useful to them in their education.

Digital Literacy Skills. O’Byrne (2014) provides a context for understanding competency in the age of technology by discussing the importance of developing digital literacy skills. Digital literacy refers to mastery of skills required to successfully navigate information available online. The degree to which individuals are able to improve digital literacy skills will determine how effective they will be in using technology in navigating society. Sloan et al. (2000) further elaborated on this idea by explaining that since the Internet is becoming the primary resource for gathering and relaying information, users should begin to be taught how to properly read and interpret content. Their research proposed that students go from being content consumers to content curators, an approach that empowers them to collect and condense information as they please, by examining different instructional resources that can be used by educators. This includes the Online Collaborative Inquiry (groups of students searching and synthesizing information), the Online Reading Comprehension (strategies and practices available to students), and the Online Content Construction (students constructing and redesigning texts). Since the Internet has changed the idea of what can be known as text, the approach to literacy and comprehension needs to be restructured and redefined as well (Sloan et al., 2000).

Cihak et al. (2015) examined the effectiveness of improving digital literacy in students with intellectual disabilities. Since technology is becoming an integral part of our everyday lives, these skills play an essential role in helping to navigate the world around us, posing challenges for individuals with intellectual disabilities given the many difficulties they have associated with their ability to process information and interpret social cues. Their research supported an approach that promotes engagement with others within external environments and suggest that these individuals require more direct intervention through visual cues and interpretation of symbols (Cihak et al., 2015). Technology can play a vital role in accomplishing this, making

digital literacy a crucial component in educating students within this population. By giving instruction on digital literacy to three high school students with moderate intellectual disabilities, their study determined that these students were able to learn through strategies such as the use of screenshots, behavior modeling, and behavior prompts to perform basic skills in areas such as emailing, bookmarking, and cloud storage. These findings demonstrate that these strategies were effective in teaching digital literacy skills to this population, greatly expanding their ability to navigate and engage the world around them (Cihak et al., 2015).

Parker & Banerjee (2007) explored the technology competency in education for students with learning disabilities (LD) and attention-deficit hyperactivity disorder (ADHD). Their research introduces the idea of a digital “playing field” and asserts that students with LD and ADHD must be on the cutting edge in their understanding of technology in order to remain on par with other non-disabled students. They investigated students’ perceptions of their technological competency compared to their non-disabled peers by surveying 142 undergraduate students, evaluating areas such as comfort level and fluency. Results found that both groups of students exhibited a high threshold for technological competency, indicating that students with disabilities have the capacity to thrive with the use of technology in an academic environment at the same rate of their non-disabled peers (Parker & Banerjee, 2007).

Basic competency in technology is required in order to navigate today’s educational landscape. Students must possess fundamental knowledge on how technology works. They must also demonstrate proficiency on how technology can be used to convey and receive information. For students with disabilities, this must be acquired while also determining how technology can best be used to address their limitations.

Benefit #3: Improved Social Functioning

In this section, I reviewed existing research on technology resulting in improved social functioning for students with disabilities. This includes areas such as communication and engagement.

Communication. Hynan et al. (2014) discussed the role of technology in improving social skills for young adults with communication disorders by examining how social opportunities can be expanded for individuals within this group. Their study interviewed 25 adolescents and young adults in a wide range of educational settings and assessed perceptions of their experience with the Internet and social media. Results found improvements in several areas including: desire to be online, self-determination, self-representation, and enriched friendships.

Engagement. Grabinger et al. (2008) explored the obstacles related to retention and engagement for students with psychiatric impairments. Their research cited an example of a student named Kami, who has bipolar disorder and is enrolled in an online course. As the course begins, she encountered difficulty using the navigational tools. She eventually became overwhelmed with the large amounts of information and drops out after just a few days. This represents the growing number of students with psychiatric impairments who are unable to fully engage in online instruction due to difficulties with communication and processing information (Grabinger et al., 2008). This research then pointed to what is known as the Universal Design for Learning (UDL), a framework for designing instruction that enables students with disabilities to acquire knowledge and skills, to address these issues. UDL provides academic support by promoting achievement among students and reflects the idea of a continuum of learning that focuses on a broad range of deficiencies that can exist for a student (Grabinger et al., 2008). It then makes recommendations based on these deficiencies on how these areas can best be

addressed in an educational setting. Specific technology can be used to address specific learning deficits. For example, if a student has an inability to organize thoughts or follow a logical argument, an instructor may want to recommend voice recognition software for note taking and/or digital slide shows to create assignments. Other options include group software such as discussion forums and chat rooms to address difficulty with communication and multimedia platforms such as YouTube and Flickr to address difficulty with information processing (Grabinger et al., 2008). The UDL can be helpful because it gives viable options for several areas as opposed to a one-size-fits-all solution.

Given the impact that cognitive and behavioral issues can have on areas related to learning, impulse control, memory and focus, these conditions can hold profound implications for social functioning in education (Parker & Banerjee, 2007). Since technological competency is becoming an increasingly important aspect of functioning in today's society, a breakdown in this process can create tremendous difficulty in pursuing and achieving educational goals. Many educational institutions do not possess the appropriate resources to properly support and accommodate students with disabilities.

Findings to address research question 2, What does the extant literature report are barriers in the provision of technology for postsecondary students with disabilities included 3 barriers. Barriers included lack of institutional support, lack of personnel training, and limited access to online resources.

Barrier #1: Lack of Institutional Support

In this section, I reviewed existing research on barriers as a result of institutional failures to support students with disabilities. This was examined from the perspective of both the student and the educator.

Students' Perceptions. Ari & Inan (2010) provided a glimpse into perceived institutional barriers of international students by examining the perceived needs of 22 students with disabilities enrolled in public and private universities and how effective these institutions are at accommodating them. They used a tool known as the Technology for Students with Disabilities Survey, which found that technology use was prevalent among participants on assignments ranging from writing papers to conducting research. Areas of specific concern included loan equipment availability and special facilities for students at institutions. This study points to the high use of technology required to perform the essential functions involved with pursuing an education by international students and how institutions may be lacking in their ability to properly furnish these students with the adequate resources needed (Ari & Inan, 2010).

Lartz, Stoner, & Stout (2008) conducted similar research for their article on perceptions of students who were deaf in postsecondary education by examining the use of assistive technology from the perspective of students who were deaf that were attending hearing institutions. Interviews were conducted and videotaped with nine students regarding their attitudes and beliefs about technology use on campus. Examples of technology for these students included: computers, communication devices (i.e., cell phones), captioning, hearing aids, and other visual aids. Data was analyzed and results were separated into three categories: perceived benefits, barriers, and facilitators. While perceived benefits included greater independence and increased communication with professors, barriers included difficulty coordinating technology services and miscommunication with interpreters. Facilitators for technology use include self-advocacy and teamwork. This study provided a glimpse into challenges these students face, particularly as it relates to service delivery and access to technology on university campuses.

Fichten et al. (2007) seeks to develop an instrument to help measure students' perceptions of accessibility to technology on university campuses. This tool was based on data collected from a study using 81 community college students with disabilities. The tool included a survey of eighteen, self-administered questions geared toward understanding students' perceptions of accessibility on campus. Measures included sub-scores in three areas: availability and support, competency, and new technology. The instrument was found to be a reliable measure of students' perceptions. These types of tools, if widely adopted by colleges and universities, could provide insight by highlighting areas of specific concern for students with disabilities in need of academic support.

Barrier #2: Lack of Personnel Training

In this section, I reviewed existing research on the barrier of lack of personnel training. This was examined from the perspective of both the student and the educator.

Educators' Perceptions. Bausch & Ault (2012) set out to examine how effective postsecondary institutions were at preparing personnel who work with students with disabilities as it relates to technology. They discussed IDEA (Individuals with Disabilities Education Act) as the foundation for making provisions for students and the use of technology in higher education. But in doing so, they point out that there may be some discrepancy in how these services are delivered at the postsecondary level, as it is contingent upon university personnel and their level of understanding of the technology they seek to provide. Their research investigated how well postsecondary institutions believe they are training and preparing their disability-related personnel to meet the growing technological demands of students with disabilities. They conducted a study involving participants from 251 universities by collecting data through surveys. Results found that while the programs provided instruction in technology, they had

limited or no access to this technology during training. This highlights the disconnect between knowledge of available technology versus understanding that comes with actual use. Participants also indicated major barriers to access including lack of financial resources and lack of storage facilities. This information can be useful in helping colleges and universities with planning in areas relating to the allocation of funds as well as investing in hands-on training in technology for faculty and staff.

In a similar study, Kamei-Hannan et al. (2012) investigated the quality of training in technology for prospective educators in three graduate programs. The training was specific to teaching students with visual impairments. Data was measured based on learning outcomes using pre- and post-tests along with a follow-up questionnaire. Results indicated there was a relationship between frequency, skill level, and the perceived importance of the technology, meaning that how often a particular technology was used, and the skill level associated with it increased and improved based on how important the technology was perceived by the graduate students. Prospective educators can benefit from courses in technology to increase knowledge and develop skills. The study also illustrates how educators can benefit from additional training based on how technology continues to be used in an academic setting.

Safhi et al. (2009) also investigated teacher training on the use of technology for students with visual impairments. To do this, they examined an international database maintained by the International Council for Education of People with Visual Impairments. Electronic surveys were distributed via email regarding the effectiveness of teacher training in technology. Results found that 71% of participants indicated that technology was part of their teacher training program, while 29% indicated that it was not. Other findings determined that among participants, knowledge of technology was highest in level of competency and lowest in the knowledge of

legislative policies and regulations. This again points to the fact that while international teacher training does a good job of providing knowledge and exposure to technology, more work needs to be done to address gaps in understanding of policies related to compliance with service delivery as this can impact practice.

Fichten et al. (2003) used separate studies to examine how effective postsecondary institutions were at providing training and access to technology. The participants were working professionals from international postsecondary institutions. The first study included 156 college and university personnel (English-speaking) who participated in structured interviews. In the second study, 40 community college personnel (French-speaking) did the same. Results found that most of the institutions had adaptive equipment for students with disabilities and offered loan programs that were highly effective. However, the participants themselves were not very knowledgeable on how to use this equipment, with French-speaking personnel scoring lower than those who spoke English. Conversely, personnel from French-speaking schools perceived themselves as having better met the needs of their students. Both sets of participants expressed the need for better prepared students, more accessible instructional materials, and greater technical support on campus. This information points to the concerns of educators in addressing the needs of students and how confident they feel in their ability to do so. And while technology is available, there may be a disconnect between what educators know and how these services are administered to students on campus.

For students to be effective in their use of technology, educators and university personnel must also be well-versed as to what is available. Lack of knowledge in this area can hinder student progress in an educational setting. The role of educators is an integral part of student success.

Barrier #3: Limited Access to Online Resources

In this section, I reviewed existing research on the barrier of limited access to online resources. This includes areas such as accessibility issues and issues with instructional support.

Accessibility Issues. Sloan et al. (2000) shed light on accessibility issues by asserting that following the advent of the Internet in the late 1990s, a huge emphasis was placed on addressing accessibility issues. Challenges related to properly accessing online information began to be addressed. While the Internet increased online participation and made the world more inclusive, the highly informative and visual nature of the Internet still caused substantial impediments to certain users depending on their disability. For instance, individuals with visual, motor, and/or cognitive impairments were deemed more likely to be impacted in their ability to access information online. Since most resources were now accessed via the Internet, this created a greater need to address these issues.

While certain technology such as screen readers can be used to address disabilities like learning or visual impairments, in most cases this technology is heavily reliant upon the actual design of a particular web site. Screen readers, for example, are unable to identify and interpret graphics and pictures and would not be effective on web sites that employ the use of these features. Consequently, a large part of accessibility is dependent upon web design. If web designers are not aware of this reality, certain sites can become inaccessible to certain users. The design of most web sites can include aspects such as frames (multiple pages displayed at the same time) as well as codes and scripts (language used to make web pages more dynamic). Both may present obstacles for students with disabilities given that most technology may not be compatible with these features. To demonstrate how these challenges can best be addressed, Sloan et al. (2000) deconstructed an educational website to illustrate how minor adjustments to

the design and layout of a web page can improve the accessibility of that site. They made suggestions related to site structure, navigation tools, and text links to improve web design for users with disabilities.

Hashey & Stahl (2014) outlined some of the challenges related to accessibility and online courses. They cited an example of an online instructor, Mrs. Pierce, who performed several tasks related to her course within minutes. She sent feedback on assignments, posts questions to a discussion board, and records a tutorial video. As a former classroom teacher, she was experiencing a great deal of fulfillment in her new role and is amazed with the flexibility it provides. One day, she received an email informing her that her class materials are not accessible to all students. She learned that while most of her students are experiencing success, some are encountering barriers she did not anticipate. This is a growing trend among online instructors as online courses become increasingly popular among students.

As enrollment grows, so does the number of potential accessibility issues. It is imperative that instructors become actively engaged in the decisions that impact accessibility, such as the types of technology being used and how this can alternately affect the performance of students with disabilities. Instructors must ensure that online education is fully accessible to all students by knowing what barriers exist and what tools can address them (Hashey & Stahl, 2008). Several resources can aid in this process. One resource is the Voluntary Product Accessibility Template (VPAT), located in Section 508 of the Individuals with Disabilities Education Act (IDEA). This tool provides information on specific devices that can be used to address specific impairments in an educational setting. Other resources include webaim.org, a website designed to improve the accessibility of other web sites, and the Purchase of Accessible Learning Materials (PALM) initiative, a tool that helps educators, families and advocates find assistive devices and accessible

educational materials (Hashey & Stahl, 2014). Although many educators are unaware of these resources, they can be extremely useful in addressing the educational needs of students with disabilities.

Kharade & Peese (2012) discussed accessibility and web-based learning for students with visual impairments. The benefits to web-based learning for these students included remote learning and instruction as well as increased opportunities for continuing education. But despite the many advantages, there are also some setbacks associated with online learning and this group, most of which involved inadequate or inappropriate use of technology. The research identifies technological challenges related to online learning for students who are visually impaired. The research sought to answer two questions: 1) how do visually impaired students perceive their learning in online courses, and 2) what are the challenges that visually impaired students face in the online learning environment? The international study involved 12 students with visual impairments currently participating in online education. Email interviews and online surveys were conducted to assess how these students perceived their educational experience and how access to technology affected their participation in the course. Results found that while online learning helped to address barriers related to accessing course materials and allowed them to work at their own pace, participants expressed concerns related to the inability of screen readers and screen magnifiers to read graphics and cover the entire web page. Other barriers included difficulty with accessing online features such as discussion boards and timed exams. Suggestions offered by students included soliciting their feedback regarding accessibility concerns and the use of a technology specialist in the planning of online courses.

Wolfe & Lee (2007) examined issues related to accessibility and print media. They explored inherent challenges involved with accessing print materials for students with disabilities

related to reading (i.e., learning disability, visual impairment). Print media refers to any form of converted print text into an electronic or digital format (Shpigelman et al., 2021). The research focused on legislative and grassroots efforts designed to improve and address issues related to access. State legislation, such as the Kentucky Postsecondary Textbook Accessibility Act, requires that all postsecondary institutions within the state provide access to instructional materials to students with reading disabilities in alternative formats. Organizations such as the American Association of American Publishers are working to make these state laws effective nationwide. Best practices to ensure accessibility include collaborations and agreements with publishers, centralized file-sharing, guidelines regarding quality of alternative forms of media, systemic production and delivery of alternative media, and assistive technology training. The research concluded that more work needs to be done to improve service delivery models, identify compatible assistive devices, and create additional forms of alternative media in order to make print materials more accessible to students.

Issues with Instructional Support. To further elaborate on print media, Anderson-Inman (2009) discussed the support of the use of electronic texts for students with disabilities. The author introduced a collaborative initiative between the University of Oregon and the U.S. Department of Education that focuses on researching effective strategies to resolve issues involved with supporting electronic texts for students with disabilities. The initiative, known as the National Center for Supported e-Texts (NCSeT), was founded upon four research questions: 1) what characteristics of supported electronic texts facilitate or impede access to and learning of academic content, 2) does supported electronic texts improve learning of academic content in educational settings, 3) what student characteristics influence the effectiveness of supported electronic texts, and 4) what contextual factors influence the effectiveness of supported

electronic texts? There are 11 categories of supportive resources which serve as the basis for the work of NCSeT. These areas are: presentational resources (i.e., font size, background), navigational resources (i.e., links, menus), translational resources (i.e., text-to-speech, captions), explanatory resources (i.e., interpretations, descriptions), illustrative resources (i.e., photos, videos), summarizing resources (i.e., table of contents, timelines), enrichment resources (i.e., background info, footnotes), instructional resources (i.e., tutorials, prompts), notational resources (i.e., highlighting, bookmarks), collaborative resources (i.e., online chat, email), and evaluative resources (i.e., surveys, interviews). Research at NCSeT suggests that the presence of these tools embedded within electronic texts can make information more accessible and significantly improve reading skills for students with disabilities involving print recognition and information processing.

The concept of scaffolding can be used as a means of providing students with additional support. Scaffolding, in conjunction with other supportive resources, can be a powerful tool because it promotes interaction, models effective reading strategies, and provides feedback to students with disabilities (Anderson-Inman, 2009). Scaffolding can be used to benefit any student; however, within the context of technology such as electronic texts, scaffolding is viewed as an accommodation because the goal would be to assist individuals who have specific difficulties related to reading, such as visual/auditory processing, learning, and/or attention deficits. The research examined four studies using scaffolding conducted by NCSeT and how each contributes to the overall goal of fostering greater understanding of supporting electronic texts. Each study focused on a particular supportive resource (i.e., talk-to-text, captions, digital notetaking), how it applies to a specific disability (i.e., visual, intellectual), and how these strategies can collectively be improved. Results concluded that while some supports were more

effective than others, this was usually based on the options that were available to the student. In other words, if the student had more than one of a specific type of support to choose from, that support was deemed more effective as opposed to a one-size-fits-all solution. The studies also found that the integration of students' perceptions and feedback played a major role in measuring the effectiveness of a particular support (Anderson-Inman, 2009).

Implications for Practice

This article provides a general overview of research outlining the benefits and barriers related to the provision of technology to students with disabilities in postsecondary education. Benefits include improved academic performance, increased competency, and increased social functioning. Research shows that technology use addresses fundamental areas of academic performance such as reading comprehension, composition, and creation of educational content. Research also provides specific examples of products that can best be used by students to address limitations in these areas. Technology also increases competency in navigating educational environments while promoting positive social interactions with others. Barriers included lack of institutional support, lack of personnel training and limited access to online content. Based on research, benefits pertain mostly to individual performance, while barriers pertain to factors outside of the individual such as institutional shortcomings.

Implication for Practice #1- Know What You Need

In order for educators to properly address the needs of students with disabilities, they must first know what technology is available to them. Research indicates there are several devices and software that can be used to address the limitations of students with disabilities in an educational context. Read aloud software and portable reading devices can be used to improve reading comprehension skills for students with print disabilities related to learning and visual

impairments. The use of digital videos and graphic organizers can be helpful to students who struggle with communication and information processing. It is also imperative that educators become aware of resources that exist to promote digital literacy and overall technological competency. This is important in helping these students to utilize technology in order to engage and maximize both academic and social components of their education.

Implication for Practice #2 – Be Prepared

Educators and academic institutions must also properly prepare themselves to adequately address the needs of their students. Because the nature of disability is idiosyncratic, the needs of students are constantly changing. Technology changes at times at an even faster pace. As a result, educators and administrators must remain abreast on how specific technology can be used to address specific needs. This makes technology use a key component in the preparation of faculty and support staff at postsecondary institutions. Teacher preparation training programs should provide course offering on assistive technology that not only make potential educators aware of technology but also provide opportunities to demonstrate how this technology can be used. Institutions should also make sure that they remain up to date on their inventory of devices and software, offering loan programs and proper storage facilities.

Professional development should also be an ongoing part of all universities to keep faculty and staff informed of policy initiatives as well as current trends in education and accessibility.

Implication for Practice #3 – Ensure Access

It is also important that educational institutions maintain an environment that is accessible to all students. Assistive technology must remain up-to-date and compatible with technology that already exists. Educators must also be aware of resources that support accessibility as well as which technology is most effective for specific disabilities. It is also

helpful to communicate regularly with students regarding their specific need and to have a working knowledge of current policies pertaining to accessibility in postsecondary education.

Conclusion

This article provided a general overview of research outlining the benefits and barriers related to the provision of technology to students with disabilities in postsecondary education. Benefits include improved academic performance, increased competency, and increased social functioning. Research shows that technology use addresses fundamental areas of academic performance such as reading comprehension, composition, and creation of educational content. Research also provided specific examples of products that can best be used by students to address limitations in these areas. Technology also increased competency in navigating educational environments while promoting positive social interactions with others. Barriers included lack of institutional support, lack of personnel training and limited access to online content. Based on research, benefits pertain mostly to individual performance, while barriers pertain to factors outside of the individual such as institutional shortcomings. This indicates that while postsecondary students stand to benefit the most from their exposure and use of technology, postsecondary institutions may be inadvertently undermining their efforts to facilitate student success. This suggests that more research needs to be done on ways to educate and inform postsecondary educators on the perspectives and needs of students with disabilities.

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CHAPTER 3

ARTIFACT 2

Promoting Resilience Through Technology in College Students with Disabilities: An Autoethnography

Introduction

Colleges and universities are mandated to provide educational accommodations for students with disabilities in the form of assistive technology (McNicholl et al., 2019). This is significant given that in 2016, nearly 20 percent of undergraduate students in the U.S. reported having some form of disability (National Center for Education Statistics, 2021). Persons with disabilities are achieving at lower rates in society than their non-disabled counterparts (Bureau of Labor Statistics, 2021). And while there are legal support mandating accommodations, there seems to be a disconnect between postsecondary students with disabilities and the educators seeking to provide them with academic support (Bausch & Ault, 2012). This lack of support can lead to lower graduation rates among students with disabilities (Pingry O'Neill et al., 2012), impeding their ability to successfully transition to the labor market (Pingry O'Neill et al., 2012; Shpigelman et al., 2021). Although technology use is a critical component to academic success, more work needs to be done to facilitate communication between students with disabilities and their educators.

Purpose Statement

This article investigated the role of technology in promoting resilience as experienced from the perspective of a postsecondary student with a disability. The article explored the experiences of the student through three stages of their education: undergraduate, graduate, and doctoral studies. It examined how their awareness, or lack thereof, regarding technology

influenced academic outcomes during each phase. The narrative deconstructs the benefits of technology as well as the barriers associated with both individual and institutional factors. The narrative is explored through the lens of the resilience model as a means of highlighting the role of technology in overcoming adversity created by limitations. The purpose of this article is to provide a firsthand account that can be used as a tool to engage educators to help them better understand how the concerns of these students can be addressed within an educational context.

Overarching Objective

This article seeks to answer two research questions.

Research question 1: What are my experiences as a college student with a disability?

Research question 2: How was technology used to overcome institutional barriers to become more resilient?

I aim to show how this research can be used to inform educators looking to improve academic outcomes by seeing the world from the perspective of students with disabilities.

Literature Review

Shpigelman et al. (2021) discuss the neglect of students with disabilities in models of student development in higher education. The authors use the three waves model that was designed to understand the development of students as they transition from high school to college to the world of work. The first wave focused on intellectual competency and interpersonal skills. This wave asserts that students need to develop in a particular way both cognitively and emotionally in order to become successful as adults (Shpigelman et al., 2021). However, this wave did not take into account students from marginalized or underprivileged backgrounds. The second wave focused on the role of social and cultural identity development in

students. The third wave focused on the role of power dynamics in shaping student development and sought to examine the role of historical and structural forces (Shpigelman et al., 2021). The authors point out that none of these waves took into account the role of disability in the development of students in higher education (Shpigelman et al., 2021). The authors conduct a study that seeks to understand the role disability resource centers on campus can play in promoting this development.

The authors begin by highlighting historical initiatives in Israel designed to implement service provision and delivery for students with disabilities in higher education. They seek to understand the experiences of 21 students receiving assistance from 36 disability service centers. They conducted semi-structured interviews with each student on their daily routines as well as their interactions with support services on campus. Participants represented a wide range of disabilities including physical, psychiatric, learning, and sensory impairments. Results found that students face challenges in three areas: academic and administrative, social, and emotional. Students found many academic environments to be inaccessible and that faculty were not trained in how to address their needs. They also found the process of seeking accommodations to isolate them socially from other students. And they found the process of self-identification as causing a great deal of emotional distress (Shpigelman et al., 2021). On a positive note, they found disability service centers to be beneficial in helping them to navigate larger academic environments and teaching them how to advocate for themselves (Shpigelman et al., 2021). Results also found that disability service centers could improve on desegregating students with disabilities from their non-disabled counterparts on campus by incorporating a more inclusive approach to student services and helping to better integrate students with disabilities from college to the workforce (Shpigelman et al., 2021).

In her article, Harris (2021) argues that race and disability have a complicated and interconnected history. Many institutions, including education, have used disability as a tool of subordination and discrimination. She asserts that concepts related to aesthetic theories of disability, such as intersectionality and critical disability theory, can be used to understand and analyze race and disability through a more unifying lens (Harris, 2021). This is necessary since disability rights movements have traditionally excluded issues of race, while racial equity movements have done the same for issues pertaining to disability. Aesthetic theories involve responses to physiological and biological factors in society that result in structural subordination over time (Harris, 2021). From this perspective, race and disability are not exclusive to one another, but are similar since both are viewed in light of what is considered “normal” or ideal. She cites scholars such as Kimberly Crenshaw and Dorothy Roberts to illustrate her points and uses an example of a young, Black male with autism who was falsely imprisoned after being arrested while standing outside of a public library in Virginia throughout her work. Aesthetic theories of disability give insight into how race and disability simultaneously work together to create structural inequalities for members of both groups (Harris, 2021).

In their article, Aquino & Bittinger (2019) discuss the impact of self-identification of students with disabilities in higher education. Self-identification is the act of disclosing one’s disability status to others. The authors point out that students with disabilities choose not to identify themselves for a number of reasons, including social stigma, shame, and isolation from other students (Aquino & Bittinger, 2019). The authors also indicate that in some cases, identity is fluid for students with disabilities and their status can change at any time, which can impact when and if a student chooses to self-identify while in college. Since self-identification is a voluntary act, colleges and universities are not required to provide services until a student self-

identifies. This has an unintended effect on postsecondary research given that students are able to self-identify and/or un-identify at various points throughout their postsecondary experience (Aquino & Bittinger, 2019).

The authors attempted to understand what factors contributed to students' decisions to self-identify or un-identify while in college. They utilize data from a five-year period in which students chose to self-identify in their first year while then choosing to continue to self-identify or un-identify in subsequent years. The authors found that factors, such as having more than one disability, contribute to students' decisions to self-identify. They also found that involvement in other community resources for persons with disabilities, such as the Department of Vocational Rehabilitation, contributed to self-identification (Aquino & Bittinger, 2019). However, the authors discovered that demographic information, such as race and ethnicity, contributed to the decision to not identify. Black and Hispanic students were less likely to self-identify than their White counterparts (Aquino & Bittinger, 2019). This could be related to the risk of added social stigma or negative perceptions related to historical treatment of both groups. The authors conclude that more research needs to be done to understand the factors that influence self-identification in order to adequately address the needs of students with disabilities in postsecondary education.

Goegan et al. (2019) examine the factors contributing to the continued use of assistive technology by students with disabilities in higher education. The authors begin by stating that due to labor market demands, there has been an increase of students pursuing postsecondary education. This includes students with disabilities who seek out support services such as assistive technology to improve their chances of success. The authors seek to understand what factors contribute to student's decisions to continue to use technology throughout their education. These

factors include individual (i.e., motivation, self-advocacy skills), environmental (i.e., attitudes of others, climate of support), and technology (i.e., maintenance).

The authors utilize both qualitative and quantitative methods such as surveys and interviews to conduct their research. Participants included 85 students from 3 postsecondary institutions in Canada. Participants were represented from a range of disabilities including learning and psychiatric impairments. Results found that individual factors contributed most to continued versus discontinued use of assistive technology by students. Results also note that environmental factors such as quality of training can play a role in continued versus discontinued use (Goegan et al., 2019). The authors conclude that this information can be helpful in providing insight to colleges and universities looking to find ways to better support students with disabilities in these areas.

Methodology

Autoethnography is a research method that attempts to analyze personal experiences as a means of understanding larger systemic issues (Ellis et al., 2011). Using components of autobiography and ethnography along with narrative research, this method seeks to address power dynamics associated with traditional methods of qualitative research (Poerwandari, 2021). This method focuses on the experiences of individuals to develop knowledge regarding broader systemic issues, which holds implications for the field of education as it provides social context and chronicles the journey of the individual through writing (Dyson, 2007). For individuals who are members of marginalized groups, such as persons with disabilities, autoethnography can be used as a powerful tool to promote dialogue and raise awareness regarding their concerns. Given the role that technology has played in helping me to overcome limitations in education, I concluded

that autoethnography would be the most appropriate methodology to accomplish the overarching objective of this chapter.

Participant

I believe that autoethnography was the appropriate methodology for me given both my personal and professional experience involved with my identity as a person with a disability. As I began to reflect on my journey to this point, I realized how my understanding of this identity evolved as I gained exposure to technology and the resources that were available to me. I concluded that my journey in education provided an ideal context for observing this phenomenon given the period of development and the changes in technology that occurred during this time, which spans over 20 years. This experience resulted in my decision to pursue a career as a counselor for students with disabilities. Autoethnography is the best methodology that allows me to reflect upon my lived experience by chronicling my journey in a larger social context as both researcher and participant.

Positionality Statement

Growing up in South Carolina in the 1980s, I witnessed firsthand many of the social and economic inequalities that plagued the Black community at that time. My mother was the youngest of nine children and the only one of her siblings to receive a college degree. As a result, she instilled the importance of getting an education into me and my three siblings. She chose to give back to her community and worked as the director of the local community center. This taught me the importance of serving others and the responsibility involved with being a member of the Black community. Although there was not much available in terms of resources for people

with disabilities at the time, my racial identity allowed me to forge ahead when facing challenges.

Data Collection

First, I got IRB approval for data collection. Data was then collected through compiling reflections on my experiences as a student who had to overcome challenges related to multiple disabilities. Using the research question as a guide, prominent areas were highlighted that emerged throughout various stages of my educational development, such as accommodations and assistive technology. This information was then used to construct a narrative demonstrating how these areas had evolved over time and how technology was the driving force used to address limitations, correlating to a corresponding degree of academic success at each postsecondary level. Experiences as a graduate and doctoral student were included to demonstrate that as technology changed over time, so did my knowledge, awareness, and understanding as a student spanning over the course of 20 years.

Data Analysis

Once the narrative template was constructed, individual and institutional characteristics were analyzed and arranged to coincide with the benefits and barriers outlined by the extant literature. Using Dyson (2007) as a guide, the resilience model (Rutter, 2006) was then used as a metaphor to highlight protective and risk factors and illustrate how technology was used to overcome obstacles encountered during my educational development. Implications were then extracted for both students and educators regarding best practices and future policy research.

Findings

Rutter (2006) defined resilience as the interaction between risk experiences and relative positive psychological outcomes. Despite popular opinion, he described resilience as not related to individual superiority, but rather a natural function of the interaction between the individual and their environment. While Rutter (2005) credited individual attributes, such as personality and temperament, he asserted that the environment contributes in large part to the idea of resilience. Rutter supported the belief that one's environment contains both protective and risk factors that contribute to how individuals respond and engage their circumstances. Protective factors can include socioeconomic status, family support, and access to opportunity and resources, while risk factors include traumatic or negative experiences that cause emotional distress. The individual mediates the circumstances involved with their environment; however, individual responses to their environment can vary depending on biological and psychological differences (Rutter, 2006). Rutter endorsed a lifespan approach to resilience, arguing that resilience manifests itself at various times in life. He believed that resilience was mainly contextual, having more to do with exposure to resources at a given point in time (Rutter, 2006).

Findings for Research Question 1

Findings for research question 1, What are my experiences as a college student with a disability, is detailed below.

The Moment. I remember the exact moment I realized I had achieved a certain level of functioning and awareness as it pertained to my identity as a student with a disability. The moment arrived in a very subtle way; it was not magical and did not announce itself. It just came with a small reassurance that things were now different and perhaps life was now a little less

difficult. During my early days as a graduate student at UNC Chapel Hill, I decided to take the campus shuttle to class. As the bus pulled up to my stop, the wide doors opened, and I motioned to step onto the bus. But there were no stairs. The entrance platform was level to the street side. As I got on, I noticed there were no seats near the front of the bus – just spaces with poles that could be grabbed for support. The bus was crowded so I stood, faced forward, and held on to one of the poles. I gathered my thoughts and calmed my nerves. I had been in this situation before and understood the anxiety I was about to experience. But then something interesting occurred. Above the front window there was a flashing sign that indicated each stop along the route. This was accompanied by an automated voice recording seconds prior to the stop. I was amazed when I heard, “The next stop is...” blaring from the speakers and let out a sigh of relief. In this moment, everything changed. It occurred to me that this bus was universally equipped to accommodate students in wheelchairs, students who were blind, and students who were deaf at the same time, without drawing attention to their disabilities. As a student with both a visual and hearing impairment, I was in heaven. No longer did I have to suffer the indignity and embarrassment associated with navigating crowded areas, becoming disoriented and missing stops. Things were different now and had changed since my time as an undergraduate student two decades before. At that time, taking the bus to class was not a pleasurable experience. Could it be that I was now living in a more accessible and inclusive academic world, or had I just become more aware of my limitations and surroundings? Either way, I had traveled a long road to get to this point and was now in a much better position to succeed.

The Genesis. I was born with a rare genetic condition known as Alport Syndrome. This condition affects three areas: vision, hearing, and renal functioning. In terms of vision, I have what is known as high myopia, or extreme near-sightedness. This condition involves the

anatomy of the eye changing itself so that it can capture light and project visual images. Over time, the eye becomes elongated (like a football) which stretches the retina, the thin layer of tissue at the back of the eye. If the eye were to be compared to a camera, then the retina would be the film. This stretching eventually puts a person at risk for what is known as a retinal detachment, or the pulling away of the retina from the back of the eye. This can severely impair vision. When I was eight years old, I suffered head trauma while playing which detached my retina in my left eye and tore my retina in my right. After numerous medical procedures, doctors were able to repair the tear, but I lost vision in my left eye completely. Although I managed to maintain some sense of normalcy, this event was life-changing to say the least. I cannot think of an area of my life that was not impacted by my vision loss, but perhaps the areas most affected were my educational and career development.

My Journey into Postsecondary Education. My journey into postsecondary education began when I arrived on the campus of N.C. State University in the fall of 1995. I moved to Raleigh, North Carolina from Charleston, South Carolina, and had no friends or family when I arrived on campus – just a suitcase, boom box, comforter set, and a one-way Greyhound bus ticket. Looking back this all seemed to be quite risky given the circumstances, even though I did not realize it at the time. I now understand that I was in search of something more meaningful than just a college education. I always had the desire to be independent – to make it in the world on my own terms without the assistance of anyone else. My vision loss undoubtedly played a role in this, so I arrived on campus with a lot to prove to myself and others. Growing up in South Carolina, my vision loss often made it difficult for me to keep up. As a child, I always required assistance. I was usually dependent on the help of others, so I always had the desire to create an identity in an environment that extended beyond all that was familiar and comfortable to me.

College provided an opportunity for me to challenge the expectations I had for myself and the limitations of the world as I knew it. I never saw myself as less-than. I knew I could do the same as others given the chance. North Carolina State gave me this opportunity in a way that a school closer to home would not have at the time.

N.C. State was much different from the environment I was coming from. I was somewhat a fish out of water and there was a huge adjustment that needed to be made both academically and socially. I utilized some basic assistive devices in the years leading up to college and was familiar with basic classroom accommodations. But this time was much different, and I struggled to make the adjustment. There was significantly less support available at the college level, as I was expected to function more independently. There were no more built-in systems in place such as Individualized Educational Plan (IEP) meetings that would help to ensure my success. I was expected to take the initiative and ask for what I needed and was responsible for my own educational development. I had never done this before. There was a Disability Services Office on campus, whose primary role was to facilitate accommodations requests. At the time, they did this by simply sending a letter to each of my instructors informing them that a student with a disability was enrolled in their class. The letter did not identify me as the student – it was left up to me to approach the instructor to negotiate what accommodations would be provided. Some examples included extended time or alternative testing sites. The office utilized a basic, one-size-fits-all approach to providing services. Registration with Disability Services was completely voluntary. There was no follow-up. If a student failed to register, they were essentially left to fend for themselves.

Impact on my Engagement in College. It was somewhat difficult for me to adjust to this model of engagement at first. This was partly because I never had to do so in the past. In my

experience as a high school student, the environment was much smaller, and most teachers typically knew who I was, even if I had not attended their classes. It was a much more supportive, community-based environment as I went through all four years with a degree of familiarity among the faculty and staff. There was no need to articulate my concerns because everyone already knew. In addition, I had friends over the years who would assist me in class. So, there was a great deal of continuity and not much attention needed to be brought to my disability. In college, the environment was much larger and time in each course was much shorter. I was now required to reintroduce myself to a different group of instructors and students every few months. It was much harder to establish the consistency I had as a high school student. Another reason I struggled to adjust was because I had not fully come to terms with the fact that I was a student with a disability. In high school, I was treated like everyone else so acknowledging that I was somehow different was challenging for me. I felt embarrassed about needing assistance and did not want anyone to know because I thought it made me inferior. As a result, I developed a counterproductive pattern that stayed with me through my time as an undergraduate student. While I would register with Disability Services as a formality, I would not approach my instructors about getting help unless I felt completely comfortable, and the classroom was not an intimidating environment. I did not want to feel singled-out or seen as different from other students. The instructor also needed to appear to be a reasonable and understanding person who could be discreet about when I needed assistance in class. My strategy was to go as long as I could without disclosing my disability. If I was lucky, I could make it through the entire semester. In most cases, I would struggle academically, but it did not matter to me as long as I was not failing. I would eventually wait until I was completely overwhelmed and in danger of failing the course before I mentioned anything. At this point, as a last option I would

go to the instructor and express my need for help. This made me look as though I was making an excuse for my poor academic performance. This would then reinforce that I was somehow right for not telling others about my disability because no one would believe me anyway and cause me to withdraw even more. This pattern would repeat itself the following semester and would continue the rest of my undergraduate career. I did not do nearly as well as I could have had I been more open and honest about my need for support, or had the institution been more proactive in providing support or anticipating my needs.

Accommodations. My accommodations of choice, when I used them, were usually large-print materials and extended time on tests. There was also some technology available during this time, but not much. Since I had low vision, much of what I used involved some sort of magnification. These devices were usually kept in a designated room within the campus library and could only be used during certain hours. One problem I encountered was if I needed to use some equipment in the evenings to help with studying, I was restricted to the times when the room was available. There was usually one person who held the key to this room, so the hours were when this person was on campus. Because these devices were so costly, they were not allowed to be checked out or taken off-site. In addition, these devices were often larger, bulky items that were not portable and needed to be kept in one place. I did not own devices for personal use, so I was dependent upon the institution to provide them for me. However, most times these devices were out-of-date, which meant I had to make the most of what was available. The items were also usually kept in a basement or room that was hidden, which made it seem like there was some sort of shame involved with using them because they were away from everyone else. With minimal support, poor understanding, and a limited access to technology, I eventually graduated from N.C. State in 2000 with a degree in technical writing.

The Crisis and The Turning Point

In this section, I provide in detail an experience that explains a moment of crisis and difficulty as it pertains to my disability and career performance. I respond to this crisis by embracing resilience and overcoming unforeseen obstacles in my career, while gaining insight into my true identity, known as my turning point.

The Crisis. According to Rutter (2013), resilience can best be conceptualized in two phases: a crisis and a turning point. A crisis occurs when an individual experiences a setback or traumatic event. The turning point is defined by the individual's response to the crisis (Rutter, 2013). Turning point experiences are incidents that create disturbance and provoke change by removing prior options and providing new alternatives for growth and development (Rutter, 2013). In 2003, I experienced a turning point following a crisis regarding my status as a person with a disability. This was something I had taken for granted up to this point, or maybe I just chose to ignore it. In any event, I abruptly arrived at this point in the spring of 2003. This was the final semester of my student teaching experience at N.C. State. I had graduated a few years prior and returned to school to become certified as a high school English teacher. My brief stint as a community college instructor in my hometown inspired my decision to become an educator. I wanted to make a difference in my community, so I committed to taking the additional courses to become a licensed teacher. The need was so great for Black male teachers at the time, that many of my peers were able to secure employment without this credential. But I wanted to go the extra mile to give myself a competitive advantage.

During my time as a student teacher, I was assigned to a local high school in Raleigh and was paired with a veteran teacher of nearly 30 years. Overall, my experience went well, and I received positive feedback from my supervising teacher. I established a good rapport with my

students and gained practical experience in the classroom. I was on the way to achieving my goal of becoming an educator, or so I thought.

On the last day of my student teaching during the waning moments of our final meeting, my supervising teacher offered to share something with me. She had signed off on all the required documents and my student teaching experience was officially over. As she pushed the paperwork aside, she began to explain that she did not feel that teaching was a good fit for me. She said that she noticed that I had difficulty managing the classroom environment and that I struggled in some areas. She referenced the fact that I had failed to notice a student who was cheating during an exam I administered and that a parent had complained after I sent home an assignment with a misspelled word. In the most earnest way possible, in what I can only assume was an attempt to protect me, she suggested that I should instead consider working with students with disabilities. She felt that because I was a person with a disability, this would be a more suitable environment.

In that instant, everything stopped. I was not sure what this meant. No one had ever said so directly that I was a person with a disability. Was this her way of saying I was not capable or good enough? Was she trying to tell me that because I had trouble seeing I should not work with “normal” students? Was working with students with disabilities the best I could do? I was immediately confused and thrown off guard. Granted, I had some challenges related to my vision at that point, but in my opinion, it was never anything that warranted such an overt discussion. There were some things that were understood that I was unable to do, such as driving. And at times I needed a little assistance. But “disabled” was never a word I would have used to describe or characterize myself. In fact, I had never heard anyone else use the term to describe me either. And the timing could not have been worse. The fact that we were having this conversation after I

had gone above and beyond to prove that I could be a teacher was baffling to me. And the fact that I had successfully completed the supervised training was even more ironic. It just seemed like a conversation you would have had beforehand rather than afterward. Was everyone else aware of this and had just refused to say anything? My world changed from that point forward.

Over the next few months, I would go on interview after interview with no success. Here I was a certified teacher, and I was unable to find a job. I second guessed myself in a way that I had never done before. I began to wonder if what was said to me was true. Maybe I was nothing more than a person with a disability and this is what people saw during my interviews. I became so self-conscious and aware of this that I began addressing the elephant in the room before anyone else. I would tell potential employers that I could do the job even though I had a disability. Eventually, it would turn into me pleading with them to give me a chance even though the issue never came up. But none of it worked. I started to lose confidence and I was no longer the optimistic and fun-loving person that got me to this point. For the next two years I would take jobs with summer camps and afterschool programs just to make ends meet. My underemployment led me to believe I was incapable of fully participating in the workforce. But how did I get to this point? I was now a highly educated and highly trained individual who found himself living on the margins of society. To make matters worse, I got married prior to returning to school and now had no means of financial stability to support myself and my new wife.

At the time, I was not prepared for this obstacle and did not have an answer. This caused a major setback in my career as I did not have a concrete plan to address this. I had not given any thought as to how my vision loss would be addressed in the workplace. While the decline in services and support from high school to college was significant, the lack of resources from college to career was even greater. I struggled to find employment and never found a full-time

job doing what I was trained to do. I went on countless interviews with no results and began to question whether I was capable of working. Things were not coming together, and I had to figure something out fast.

The Turning Point. Rutter (2007) discussed the concept of mental feature/operation as the driving force behind resilience. Mental features involve aspects such as planning, self-control, self-reflection, sense of agency, self-confidence, and self-determination. He highlighted that mental features dictate in large part the amount of control individuals believe they have in changing events in their life that deal with adversity (Rutter, 2007). In 2005, I decided to approach things from a different angle. To address the issue of my vision loss and teaching, I decided to go back to school to pursue a graduate degree in guidance counseling. This would solve the problem by allowing me to continue working in education without having to worry about how I would manage in the classroom. I began looking into graduate programs in counseling. During this time, I came across an article on rehabilitation counseling, or counseling individuals with various disabilities. I began to think of my own experiences and how many others were possibly going through the same thing. I thought of those who perhaps were told by others that they could not accomplish certain things because of something that was beyond their control. I thought perhaps there was a reason I went through this ordeal and that I was now possibly in a better position to help others. Perhaps this misfortune in my life was for the best. This gave me a renewed sense of purpose. So, I decided to pursue a career as a rehabilitation counselor.

My graduate career began in 2005, ten years after I had arrived at N.C. State. I began my graduate studies at North Carolina A&T State University, another large, technical institution which is also a historically Black university. Even though I was told I could not be a teacher,

ironically I taught writing as a graduate assistant by day and took courses in rehabilitation counseling at night. These courses began to reshape my perspective by giving me a language for what I had been experiencing. I began to understand my disability from a psychosocial framework and how my disabilities specifically affected various aspects of my life. I was given the legal basis of disability rights and was shown how this governed areas such as education and employment. I learned that employers were not allowed to inquire about a candidate's disability during the interview stage of the hiring process. I was taught the historical context of the disability rights movement and began to appreciate the obstacles I had overcome and the progress I had made. For the first time I saw my disability as a part of my identity and not just an inconvenience that I should be ashamed of. I wrote several papers that year, one of which I had the opportunity to present at the National Council on Rehabilitation Education annual conference in San Diego, California. This was the first time I had experienced anything like this. I was now sharing my experiences with a captive audience on a national stage. Needless to say, these academic experiences boosted my confidence. I noticed the other presenters and how most of them were doctoral students. What did this mean? During the conference, I struck up a conversation with the director of the graduate program in rehabilitation counseling at the University of North Carolina – Chapel Hill. He had attended my presentation and was interested in learning more about me as a student. We exchanged information and, with the blessing of my professors at N.C. A&T, I transferred into the program the following year.

A Fresh Start. My time at UNC-Chapel Hill represented a fresh start and gave me the opportunity to recalibrate. This time I would engage in academic services from a different standpoint. For the university, the approach to providing services had changed drastically since my time as an undergraduate student over a decade earlier. There was now a greater push for

inclusion, with a greater emphasis on ethnic minorities, the LGBT community, and students with disabilities. Student services were now more customized and centralized on campus. Students were assigned counselors according to their disability and there were more specific accommodations that could be requested. Conversations on disability rights had made its way into mainstream discourse, improving communication between students and faculty members. Technology had also improved with the advent of cell phones and laptop computers that came with built-in accessibility features. The idea of universal design was becoming more popular, which meant a single device could include numerous accessibility features without altering the original design of the device. This decreased the amount of stigma for students with disabilities. Assistive devices were also becoming more affordable and could be purchased for personal use. These changes made it easier for me to utilize technology, advocate for myself, and communicate openly with my professors about my academic concerns. The cohort model of graduate school offered a smaller, more intimate environment as well, which provided a sense of familiarity and continuity among students and instructors. The subject matter of rehabilitation also gave me a degree of credibility, as my opinions were often sought out because of my experiences. For the first time in my life, being a person with a disability was seen as a strength rather than a weakness.

Another advancement in technology made it easier for me to overcome an unexpected barrier. In 2008, while in graduate school I noticed that I had difficulty hearing in some of my classes. I was evaluated by an audiologist and learned that I had developed a moderate, bilateral hearing loss. This was the second phase of my rare genetic condition. It would be another five years before I would learn about Alport syndrome. My vision had been my primary area of impairment. So, learning of another impairment represented a major setback. Luckily, I was able

to address this quickly and began wearing small hearing aids in each ear. I was now integrating technology into various aspects of my life to achieve success.

After Graduation. Since graduating with my master's in 2009, I have been working as a rehabilitation counselor for over 10 years. I have worked with various populations including students, veterans, and ex-offenders with a wide range of conditions such as physical, mental, and developmental disabilities. I have assisted them with achieving their educational and career goals by addressing their limitations to maximize their strengths. Through my example, I can demonstrate the possibilities that can exist through perseverance and determination. I have utilized the technology I learned to use in the classroom and in the workplace as well. I currently use a desktop magnifier at work to read hard-copy documents. I use screen magnification software and screen readers on my work laptop. I also use a portable electronic magnifier for meetings that take place away from my office. I have all these devices in my home office as well. All of my difficulties prepared me to be a better advocate for myself as well as the community I serve. By overcoming adversity, I can inform and educate others. I continued presenting at state and national conferences and eventually found my path coming full circle and returning to N.C. State to pursue my doctorate in education. With today's technology, I can experience success as a student that I thought was unattainable in years past. For instance, the advent of audiobooks has made reading assignments more manageable and accessible. Most universities now have loan programs for assistive devices. Campuses are more accessible, and disability services are a more broadly recognized aspect of campus life. What was once unimaginable is now available to all students. In addition, as a doctoral student, I still benefit from faculty and cohort members who are a constant source of encouragement and support.

As my doctoral studies end, I am now in the final stage of chronic renal failure, the last component of Alport syndrome. However, technology continues to enable me to maintain a high level of independence. I can administer my treatment from home and experience minimal disruptions to daily activities such as school and work. Technology has enabled me to continue to live a productive and fulfilling life. As the times have changed, I can now communicate effectively with both educators and employers regarding my needs and limitations. There seems to be more opportunity for dialogue regarding accommodations I may need and how technology can be used to facilitate my success.

Findings for Research Question 2

Findings for research question 2, How was technology used to overcome institutional barriers to become more resilient, is detailed below.

Throughout the years technology has played an integral role in helping me to overcome barriers related to my postsecondary education. As my limitations evolved pertaining to my various disabilities over the years, technology has changed significantly during this time as well. This has spanned for over 20 years and involved several postsecondary institutions. My transition from high school to college also came with a significant reduction in supports while simultaneously having to integrate new skills related to advocacy and independence. The ability to overcome these barriers was all made possible through the use of technology.

At each phase of my academic development (bachelor's, master's, doctorate), I had a corresponding disability to overcome. For my vision, I initially utilized external devices related to magnification. This helped with my ability to complete reading and writing assignments. Over time magnification became a part of the universal design of other forms of technology such

as laptops and cell phones. This greatly reduced the stigma associated with the use of prior devices and made it easier for me to blend in with other students. This also minimized barriers I experienced at the institutional level related to availability and storage. For my hearing, the use of hearing aids made it easier for me to participate in class and communicate effectively with faculty and other students. Advances in this technology allowed me to wear more discreet “ear buds” that could be synced with other forms of technology such as cell phones. For my end-stage renal failure, I utilize a small device at home that allows me to connect and complete my treatment independently at night. This innovation makes it possible for me to actively engage in school and work without the major disruption of having to regularly go to a dialysis center.

My journey in education has had many challenges, however through resilience I have been able to make it through it all. I cannot imagine having to overcome any of these barriers without the use of technology. I hope that my experiences can empower the next generation of students as well as inform the next generation of educators...

Discussion and Recommendations

Looking back, I often wonder about the words of my supervising teacher. Was what she said meant to help or harm me? Did I misinterpret, or take it too personally? Was it a blessing in disguise, or was she just being honest based on her perception? I now see working with students with disabilities as an honor and not a constraint. I wonder if I would have handled the situation differently knowing what I know now. I often wish I had the opportunity to speak to those employers again and explain how I could be successful in the classroom given the proper resources and support. Either way, it all ultimately led me to where I am today. I wish I could go back to N.C. State and equip my 20-year-old self with the knowledge I have now. But through

those seemingly negative experiences, I discovered my true identity and was able to make a positive contribution in the world, despite the barriers due to my disabilities.

My journey has given me a sense of purpose and vision. Now that I communicate with students, educators, and administrators in my current role, I am in a unique position to offer insights from my experiences. For students, I would inform them that self-advocacy is the single most important component to individual academic success. No one will take a more active role in their education than them. I would encourage them to do all that they can to educate themselves about current policies and resources that exist, be prepared to educate others who lack the knowledge, and identify sources of support on campus as well as individuals who appear to be invested in their academic performance.

Recommendations for Educators

For educators, recommendations entail self-learning and being supportive.

Recommendation 1: Self-learning

I would encourage them to learn as much as they can about different disabilities and how they impact performance in the classroom. This information may not be readily available so it may require some research on their part. Be aware that the nature of disabilities is idiosyncratic – they do not affect all individuals in the same way. Do not assume that you know how a student's disability affects them. Take the lead from the student and believe what they are telling you.

Recommendation 2: Supportive Mindset

Become a source of support and encouragement and do all you can to facilitate student success. Make disability awareness and ongoing part of your education as well as the education

of others. Promote individuals and activities that align with the mission of creating and maintaining an inclusive environment.

Recommendations for Administrators

For administrators, recommendations are related to familiarization around policy, facilities, and professional development.

Recommendation 1: Policy

Administrators should become as well versed on disability law and policy and the specific implications for your institution. They should have a clear understanding of how violations of these laws can adversely impact their institutions. They should work diligently to promote compliance in order to facilitate equitable outcomes for all students.

Recommendation 2: Facilities

Make sure your facilities are accessible and your technology is up to date. Incorporate various forms of technology that can address a wide range of limitations. Implement an expansive loan program that can be accessed by students for extended periods. Provide faculty and staff with resources for instructional support.

Recommendation 3: Professional Development

Make sure that disability training is a continuous part of your staff development. Make sure that this training includes the voices and perspectives of students with disabilities. And lastly, make sure your student body, as well as your faculty and staff, are inclusive and reflect the reality that persons with disabilities are fully capable of engaging others and contributing.

Remember all that is needed is access, opportunity, and support

Significance

The significance of this chapter is that it provides a model of how a student with a disability was able to overcome challenges in education using technology as seen from the perspective of this student. Postsecondary educators looking to provide academic support for students with disabilities stand to gain the most from the findings presented in this research. The chapter provides a glimpse into the experiences of the student and reinforces the idea that more work needs to be done to create dialogue pertaining to issues related to access and accountability at the postsecondary level. Given the legal mandates that colleges and universities have regarding the provision of technology for students with disabilities, it is imperative that educators communicate more directly with the students they seek to serve. As educators become more aware of the challenges these students face, they will be better equipped to provide them with academic assistance. The long-term effects of consistent patterns of communication will result in outcomes such as improved student engagement, faculty relations, and overall academic achievement.

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CHAPTER 4

ARTIFACT 3: Digital Storytelling Video

Working with Students with Disabilities: A Digital Storytelling Approach to Educate and Inform Postsecondary Educators

Introduction to Study

Students are constantly learning how new forms of technology can be implemented into various aspects of their educational experience. This is especially true for students with disabilities, as technology can be used to address their limitations. When used properly, technology has the potential to place these students at a tremendous advantage. What is not as clear, is the role of educators in this process. Research points to a disconnect between educators' understanding of the technology that exists and how it can best be used to accommodate students with disabilities. The advanced technological competency of students may offer a solution to overcoming these barriers.

Problem Statement

Since students are utilizing technology in different ways than educators, this creates a tremendous barrier for teachers looking to provide support. While educators require some level of formal training in the use of technology, the introduction of technology into classrooms has done very little historically to improve overall academic achievement (Robin, 2008). The presence of technology alone is not sufficient. Students are living in an age where videos, photos, blogs, and podcasts are in every aspect of their lives. Students are now considered “digital natives” because they have been immersed in the digital world from a very young age (Nassim, 2018). This has become a barrier for teachers reliant upon traditional methods of instruction to address areas such as reading, writing, and verbal proficiency. As a result, teachers are required

to be creative in how they address the educational needs of these students (Nassim, 2018). Now that digital media is more accessible, a more interactive approach should be used that engages both students and educators in an effort to improve educational outcomes.

Purpose

The purpose of this chapter is to demonstrate how technology can be used by students with disabilities as a pedagogical tool to inform educators of challenges that exist for them in postsecondary education. This can be accomplished through digital storytelling. Digital storytelling is the translation of educational material into stories by using various forms of digital media such as computer graphics, recorded audio, computer generated text, video, and/or music (Robin, 2008). Digital storytelling allows students to select a topic, conduct research, write a script, and develop a story while utilizing various forms of digital media in the process. This personalization of educational content fosters a sense of ownership and allows students to be creative in telling their stories. The seven elements of digital storytelling are: point of view, dramatic question, emotional content, voice, soundtrack, pacing, and purpose. Stories typically center around significant events or challenges in the life of the student. The overall goal of the story can be to inform and instruct others, or to examine historical events. The purpose of the story is to raise awareness in the mind of the audience regarding issues of concern within the larger community. Digital storytelling has additional educational benefits in that it develops skills in other academic areas such as conducting research, analyzing data, synthesizing, and presenting information, organization, and problem-solving skills (Robin, 2008). Research suggests that there is a need to develop a theoretical framework that supports digital storytelling in the pedagogy and content knowledge of teachers in order to properly engage today's students.

Digital storytelling enables students to select relevant topics, create themes, and develop specific points of view using a multimedia approach. Students are able to interpret events in a way that instructs and informs others as they choose. This supports both teaching and learning by engaging students and teachers in the educational process (Robin, 2016). Students improve their communication skills by organizing information, asking questions, expressing opinions, and constructing narratives. In turn, teachers become a captive audience by being drawn into the world of students while gaining insights from their experiences and perspectives (Robin, 2016).

Research Question

1. How can technology be used to inform educators regarding challenges that students with disabilities face in postsecondary education?

Design of the Study

Historically, artistic methods such as poetry, dance, and theatre have always been utilized in qualitative research (de Jager et al., 2017). Arts-based methods such as digital storytelling is an essential component in dismantling the power dynamics and hierarchy that often exists between researchers and participants. This places digital storytelling within a larger academic context. Arts-based methods are also an effective means of translating academic information to the public (de Jager et al., 2017). This endorses digital storytelling as a powerful means of engaging others in addition to serving as a valid method for conducting research among marginalized and underrepresented groups.

Participants

The following participants were chosen based on their relationship to the student, proximity to the student, and their ability to observe the educational pursuits of the student over time.

- Leonard Moore is the student. He provides a firsthand account of his experiences as a student with a disability in higher education. He discusses the barriers he encountered during this time and how he was able to navigate these circumstances using technology.
- Dr. Tamera Moore is the spouse of the student. They have been married for over 20 years and their relationship spans over the course of his time as an undergraduate, graduate, and doctoral student. This gives her immeasurable insight into obstacles faced by the student as well as an extensive understanding of the resources he used to overcome them.
- Janie Jones is the mother of the student. As his primary caregiver at the onset of his disability, she has firsthand knowledge regarding the impact his condition has had on his ability to pursue his educational goals. Given her role as his childhood advocate, she can give context and offer insight into his circumstances heading into his time in higher education.
- Dr. Cerrissa Hugie is the youngest sibling of the student. Growing up, she was able to observe the student firsthand and his response to the challenges he faced in education. This informed her educational pursuits as well. She credits the student as an example of resilience and her source of both motivation and inspiration over time.
- Dr. Yolanda Wilson is the colleague and fellow cohort member of the student. During his time in the doctoral program at N.C. State University, Dr. Wilson acted as a constant source of encouragement and support. She has worked alongside the student on group assignments and class activities, giving her a working knowledge of how the student has used technology effectively within an educational context.

- Dr. Heather Kloeker-Webster is another colleague and fellow doctoral cohort member. She has also observed the student within an educational context and has an understanding of how the student has been able to successfully integrate technology in a classroom setting.

Data Collection

Data was collected using interviews from family, friends, and colleagues regarding their perspective on challenges faced by the student during his undergraduate and graduate experiences. Participants were contacted via email and given questions regarding how resilience was demonstrated by the student over time. Participants gave consent and were asked to submit a one-minute video with their responses. The perspectives of family members were used to give background information on the student from K-12 through college. The perspectives of friends and colleagues were used to highlight his time as a graduate student. The contrast in perspectives was shown to illustrate the difference in the life of the student before and after using technology. Family members recorded their videos in person while friends and colleagues recorded their videos using personal devices. Interviews were recorded and submitted by the participants using their responses to the research question. Interviews were then compiled and edited to create an overall narrative using aspects of the principles of digital storytelling (i.e., point of view, dramatic question, emotional content, voice).

Data Analysis

Interviews were reviewed and organized in a way that provided a working timeline of events using Adobe Premiere. The dramatic question, “Who is Leonard Moore?” was used to introduce the narrative. The point-of-view of the student was then centered as the overarching component of the narrative, with the perspectives of the participants coming in at different points

to tell their version of these events. The voices of the participants were presented in a way that complimented the voice of the student, detailing his educational experiences in their own words. The content of the video was arranged to tell the story of this student in a way that was clear, concise, and well-paced to an audience of educators seeking to understand and address the educational needs of the larger population of similar students.

Artifact

Digital Storytelling Project for Leonard Moore

https://youtu.be/se7i_tum6go

Findings

Video Description

The video begins with one of the participants telling their perspective on what they believe is the defining characteristic of the student. The student then introduces himself and discusses the nature of his disability and how it has affected him within the context of his education. This is highlighted by footage of various participants detailing their observations of the student at various times in his life. The student goes on to explain how the challenges he faced were overcome through the use of technology. This is highlighted using footage of the student using various forms of technology on campus along with additional observations made by participants. The video concludes with the student reflecting on what he has learned from his experiences and how this information has informed his career as a professional working alongside other students with disabilities.

Video Transcript

(0:16) Dr. Tamera Moore: I admire Lenny's tenacity and his persistence. Lenny is one of the most persistent people that I know. If you tell him no, that is like giving him an incentive to go after his goal harder.

(0:31) Dr. Cerrissa Hugie: It seems like nothing ever stops him. He is so tenacious and so focused. I mean, he will, one obstacle will come his way and he'll, like, find a way around it or jump over it.

(0:44) Dr. Yolanda Wilson: When I think about Leonard in our doctoral program, two words come to mind: resilient and resourceful.

(0:51) Janie Jones: But one thing I said about him: he always was able to press through the things that he needed to do in order to make it successful while he was in school. I say the thing with Leonard, he prevailed, and he overcome and rise about his vision disability.

(1:15) Leonard Moore: My name is Leonard Moore, and I am currently a rehabilitation counselor. I'm also studying as a doctorate student at North Carolina State University in adult education. When I was eight years old, I was in an accident and I ended up losing, like, the sight in one of my eyes. So, when I suffered some sort of, I guess like, trauma, to some kind of head trauma where I was, my retina detached. I wasn't able to regain the sight in my left eye so, I lost sight completely and then my, I lost a significant amount of sight of my right eye.

(1:48) Janie Jones: That was a challenge, you know, they put a glass on him at a very young age. So, the challenge was how do you keep the kid from breaking the glasses so, he keep taking it off because he didn't want it on.

(1:59) Dr. Cerrissa Hugie: He has, pretty much through until he finished high school, he had no access to services, whatsoever. So, just the fact that he finished high school, I mean he was like a

regular. Like, he went through school with everybody else and, you know, did like everybody else.

(2:14) Janie Jones: He was always smart. He was always doing very well in school, you know, always making A's in school, but the issue of the back and forth with him to the doctor and, you know, being afraid really of him losing his sight, totally, but he wasn't concerned about it, you know, you want to do and be an average kid, you know, do what the average kid does.

(2:40) Leonard Moore: Since, I think, since I was so young when I lost my sight, I don't know that it just became a part of my childhood development so, it just kind of became a built-in part of my, of what my identity, who I was as a person.

(2:52) Dr. Cerrissa Hugie: And I don't think it was until he went to college that he realized that there were things that could accommodate him and make life easier for him, and so, but even through that, you know, still having to, you know, overcome, and overcome those challenges has just, I mean it's been amazing.

(3:07) Leonard Moore: As a college student unlike high school where I was able to kind of blend in, and it wasn't a big deal that I was a student with a disability. In college, it was. So, N.C. State - a very large technical university: about 30,000 students - you know, when I got there, it was almost like I was, like, in this large ocean. So, I had to learn very quickly how to survive. But at that point, I didn't know what I needed as a student with a disability so, I had to be more strategic, right? So, I learned all I could about laws. I learned all about the ADA, about IDEA. I learned about assistive technology. As I'm learning how this works for the clients that I'll be serving, I'm also learning how this works for myself. Now I'm pursuing my doctorate back at N.C. State. So, I've come full circle from being a student - fish out of water - to navigating that

big, old world as somebody who didn't do it the best, to now having full command and being in full control and in charge of the direction that my career is going.

(4:23) Dr. Heather Kloeker-Webster: Main issues that I think Leonard has had to overcome regarding his disability in the classroom is first technology, and the second is instructors who aren't always familiar with how to best accommodate his disabilities. And what those needs look like can change from different classes depending on what the assignments were, and the work level was. The PowerPoint for him, they weren't always in a format that was able for him to be able to read so, he had a converter that he used a lot but, he had the extra layer of the extra barrier. We could all look at the board see the PowerPoint and what was being presented but he would have to take it, download it, view it on his reader so, there was always a delay in what was happening for him.

(5:06) Dr. Yolanda Wilson: Leonard was incredibly resilient. Didn't let any obstacle get in his way. Certainly, experienced challenges - challenges probably that none of us even understood or knew about. He would just find ways to get the resources he needed to be successful in our program. He was one of the strongest students and quite frankly one of the best writers that I've ever seen.

(5:28) Dr. Tamera Moore: In his studies, I think he's one of those ones who has good relationships with everybody in his cohort and so he tries to not only do his work and it's not, he does not make it about him but, he is willing to help his classmates through figuring their topic out, you know, trying to figure out what it is they want to study and how to craft it in a way that makes sense. So, I like that his impact is bigger than just himself; he's not just trying to get himself to the end goal. He wants to also help other people reach their potential as well.

(6:00) Dr. Yolanda Wilson: Leonard was someone who knew that yes, he had a disability, but he never allowed the disability to define him, and he certainly never allowed the disability to stop him.

(6:14) Leonard Moore: I think the key for individuals with disabilities to empowering themselves is the career component.

(6:20) Dr. Tamera Moore: In his career, he wants to make sure that he doesn't just have a job, but that it's something that means something. So, his choice to become a counselor for people with disabilities, I think, has played into that because he wants to help other people to see that they can achieve the same things that he has done.

(6:38) Leonard Moore: I wanted to kind of lend a certain level of credibility and credence to the needs and concerns of those individuals to the field of adult education to make sure to advocate for them, to make sure that their needs were being taken seriously and addressed, and ultimately met. But I do look forward to functioning as an advocate wherever I go for individuals with disabilities, not only in their educational development but in their career development as well.

Summary

The objective of this project is to investigate an effective method of using technology to inform educators seeking to better understand challenges that exist for students with disabilities in postsecondary education. This project is designed to offer insight from the perspective of students (and their collaborators) on how their needs can best be addressed within the context of education. The aim is to provide guidance in helping educators generate solutions that can be used to increase academic engagement and improve educational outcomes for these students.

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CHAPTER 5

Summary and Impact on Policy and Practice

Overall Conclusion

This dissertation provides a general overview of the benefits and barriers related to the provision of technology to students with disabilities in postsecondary education from three distinct perspectives. The first involves a review of literature detailing the overall benefits and barriers to technology to students with disabilities in postsecondary education. The second involves research detailing the specific experiences of a student with a disability utilizing this technology. The third involves research comprised of observations made by individuals, such as family, friends, and colleagues who were in close proximity to the student during this time. Findings indicate that benefits include improved academic performance, increased competency and increased social functioning (Grabinger et al., 2008; Hynan et al., 2014; Wood et al., 2018; Nelson & Reynolds, 2015). Results also indicate that technology use addresses fundamental areas of academic performance such as reading comprehension, composition, and creation of educational content (Badge et al., 2008; Evmenova & Regan, 2019; Floyd & Judge, 2015). Specific examples of products that can best be used by students to address limitations in these areas are also highlighted in research (Mahoney & Hall, 2017). Technology was found to also increase competency in navigating educational environments while promoting positive social interactions with others such as faculty, staff, and students (Parker & Banerjee, 2007). Barriers include lack of institutional support, lack of personnel training, and limited access to online content (Ari & Inan, 2010; Bausch & Ault, 2012; Hashey & Stahl, 2014). Schools were found to not be adequately preparing faculty and staff in addition to not having adequate resources available on campus to support the needs of these students (Kamei-Hannan et al., 2012; Safhi et

al., 2009). Based on research, it appears that benefits pertain mostly to individual performance, while barriers pertain to factors outside of the individual, such as institutional shortcomings. This indicates that while students with disabilities stand to benefit the most from their exposure and use of technology, postsecondary institutions may be inadvertently undermining their efforts to facilitate student success. More research needs to be done on ways to educate and inform postsecondary institutions on how to address the needs of students with disabilities.

Discussion of Findings

As noted above, benefits and barriers to technology provisions in postsecondary schools appear to be directly related to individual versus institutional factors. While individual students stand to benefit the most from access and exposure to technology, these efforts are potentially undermined by the exposure of the institutions themselves (Sloan et al., 2000). This was consistent with research in the autoethnography where it was determined that as my understanding of technology evolved, my academic performance significantly improved as a result. This was in direct relation to the technology and resources that were available to me at the time. It should be noted that these institutions were primarily impacted by where society was, as a whole, regarding technology and access. As society evolved and improved in their understanding, institutions in turn began to change as well. Other factors included personal beliefs regarding disability as dictated by social stigma surrounding disability, prior understanding, and access to technology.

Findings in Relation to Theoretical Framework

Rutter (2006) describes resilience as the interaction between risk experiences and relative positive psychological outcome. While he credits individual attributes such as personality and temperament, he emphasizes that one's environment contributes largely to the idea of resilience.

He supports the belief that one's environment contains both risk and protective factors that contribute to how an individual engages and responds to their circumstances (Rutter, 2006). Protective factors can include socioeconomic status, family support, and access to opportunity, while risk factors can include traumatic or negative experience that cause emotional distress. Rutter (2006) believed that individuals must mediate the circumstances involved with their environment; however, responses can vary based on biological and psychological differences (Rutter, 2006). He endorsed a lifespan approach to resilience, arguing that resilience manifests itself at various points in life. Rutter (2006) believed that resilience was contextual and involved exposure to available resources at a given point in time.

The findings of the autoethnography are supported by resilience theory in that my time as an undergraduate and graduate student involved several protective and risk factors. Protective factors included my upbringing in a working-class family with a college educated parent that placed a high value on education. Pursuing a college degree was an expectation in my household so once I was given the opportunity to attend N.C. State, I was determined to succeed. Another protective factor was that I had an IEP as a high school student. So, I had some familiarity with receiving support services, even though it would be much different at the college level. Another protective factor was that N.C. State, N.C. A&T, and UNC Chapel Hill were all large institutions with an abundance of resources and support services. So, the challenge was only in learning to navigate these services. Another protective factor was my gregarious and outgoing personality. This enabled me to make connections by easily engaging with others on campus. The most significant risk factor was that I had a disability that accounted for several limitations involving reading, writing, orientation, and mobility. This posed additional risks given that I was now living hours away from everything and everyone I was familiar with. The interaction between

these factors within an educational context contributed to my ability to demonstrate resilience by achieving the outcome of graduation from both undergraduate and graduate institutions.

Resilience theory does not account for how cultural differences can influence how an individual responds to negative experiences. It would be interesting to note how my experience as an African American relates to how this group has collectively and historically responded to challenges over time. Resilience theory also does not distinguish between general traumatic events versus specific incidents related to disability. It would be beneficial to develop a framework regarding resilience as it relates to individuals like me who have acquired a disability. Resilience theory should also be seen through the lens of different developmental stages, such as adolescence and young adulthood. Since much of my adversity occurred during my college years, it would be interesting to determine if this was an optimal time given the natural transition that occurs during this stage of life.

Impact on Practice

The research presented in this dissertation holds significant implications for developing strategies to improve communication practices between students with disabilities and their educators in today's postsecondary institutions. Students must remain abreast on the latest forms of technology that can be used to address their specific limitations and be prepared to educate others about these devices when necessary. In addition, students must possess a working knowledge and basic understanding of policies in education to ensure they are receiving fair and equitable treatment. Students should also learn to identify and engage sources of support that are available to them on campus. This includes resource centers, student organizations, and support services that can help to integrate them into the larger academic community. Students should also be equipped with basic skills in self-advocacy as they leave high school and enter

postsecondary education. This is arguably the most important component to their success as it empowers them to take a more proactive role in communicating their needs to others.

Educators play a vital role in facilitating interaction with their students as well. Educators should actively seek resources that educate them on the nature of various disabilities, particularly those that impact learning, and how these conditions could affect student performance within an academic context. Educators should advocate to their administration that this training be included as a mandatory part of their ongoing professional development. They should also find ways to make themselves available once they learn they have a student with a disability enrolled in their classes. Educators should also remain up to date on the latest forms of technology that pertain to teaching and learning (i.e., online learning environments, discussion boards) and ensure that all students have access to this information.

Assisting students with disabilities requires a comprehensive approach to create an inclusive and supportive learning environment. One key aspect is implementing Universal Design principles in courses, classrooms, and digital platforms, ensuring that materials and resources are usable by all students, regardless of their abilities. Providing accessible course materials in various formats, such as digital text, large print, audio recordings, and sign language interpretations or captions, is essential.

Offering regular training for faculty and staff can help them understand the needs of students with disabilities, create accessible course materials, and foster inclusive classroom environments. It's also crucial to provide a range of accommodations and support services tailored to individual students' needs, such as extended time for exams, note-taking assistance, and interpreting services.

Developing and communicating clear procedures for students to request accommodations ensures that the process is streamlined and efficient. Encouraging collaboration between faculty, staff, and disability services offices can help ensure that students receive appropriate accommodations and support in a timely manner.

Promoting a campus culture that values diversity and inclusion encourages understanding, empathy, and collaboration among all students, faculty, and staff. Supporting students with disabilities in developing self-advocacy skills enables them to communicate their needs effectively and navigate college life with confidence. Regularly assessing the progress of students with disabilities and adjusting accommodations and support services as needed ensures that their evolving needs are met.

Lastly, engaging in ongoing evaluation and improvement of policies, practices, and support services for students with disabilities can lead to a more inclusive environment. By making improvements based on feedback and research findings, educational institutions can foster a culture of diversity, inclusion, and mutual respect that benefits the entire campus community.

Impact on Policy

Policy initiatives can help colleges and universities to generate solutions that can be used to increase academic engagement and improve educational outcomes. Policy initiatives to support colleges with students who are blind and deaf can greatly enhance the accessibility and inclusivity of higher education. These initiatives should aim to provide resources, support, and a level playing field for all students, regardless of their sensory limitations. Some potential policy initiatives include: Funding for Accessible Technologies: Provide grants to colleges for the procurement and maintenance of accessible technologies, such as screen readers, Braille

displays, and assistive listening devices. Training for Faculty and Staff: Implement mandatory training programs for faculty and staff to better understand the needs of blind and deaf students and learn how to create accessible course materials and inclusive classroom environments.

Accessible Course Materials: Require colleges to provide course materials in accessible formats, such as digital text, audio recordings, and sign language interpretations or captions. Universal Design: Encourage the adoption of Universal Design principles in college facilities and digital platforms, ensuring that they are usable by people with diverse sensory abilities. Scholarships and Financial Aid: Offer scholarships and financial aid specifically for blind and deaf students to help alleviate the financial burden of attending college. Support Services: Establish dedicated support services for blind and deaf students, including notetaking, tutoring, and interpreting services. Sensory Disability Resource Centers: Develop sensory disability resource centers on college campuses to provide a centralized location for support, resources, and community-building. Collaboration with Disability Organizations: Foster collaboration between colleges and disability organizations to share best practices, resources, and expertise. Accessible Assessment and Testing: Ensure that assessment and testing methods are accessible for blind and deaf students, allowing for appropriate accommodations and alternative formats. Disability Awareness Campaigns: Launch public awareness campaigns to promote understanding and inclusion of blind and deaf students in higher education settings.

Postsecondary administrators should possess a thorough understanding of laws pertaining to students with disabilities and how to best implement these policies into their institutions in a timely and effective manner. Technology should remain up to date, made available to students, and remain housed in appropriate and accessible facilities on campus. Faculty and university personnel should also receive training on specific technology on an ongoing basis. In addition,

disability awareness should be a continuous part of professional development and training for faculty and staff. Finally, since digital storytelling has been shown to be an effective way of using technology to inform others, postsecondary administrators should implement programs that utilize this tool as a means of raising awareness, reducing social stigma, and building community on campus.

Future Research

There are several areas of research to consider to further elaborate on the topics covered in this dissertation. Transition planning should be evaluated at the secondary level to determine what strategies high schools can use to promote self-advocacy skills in students. Educational plans should be incorporating these skills in ways that are transferrable at the postsecondary level. Policymakers could use this information to develop a system designed to implement educational plans that follow a student from high school to college. More research also needs to be done to better understand how legal ramifications are enforced and what accountability measures are in place at colleges and universities to ensure equitable outcomes for students. This information should be used to empower parents, students, and other stakeholders to help with navigating the educational landscape. Further analysis should be done on the role of specific technology an education and how they can best be used to accommodate students. Since the nature of disability is complex and ever-changing, colleges and universities must ensure that they remain on the cutting-edge regarding issues of equity and access. Research should also be done to develop strategies to improve competency of university personnel, as part of both the training process as well as ongoing professional development. Digital storytelling should be examined further to determine how colleges and universities can implement programs that can incorporate this method as a means of improving competency, informing policy, and building community

among students. Lastly, research should be done to examine how educational and employment policy can overlap in career planning at the postsecondary level. This should be done in an effort to improve career outcomes for students with disabilities by understanding the relationship between accommodations in education that also translate into the workplace. The role of technology in facilitating interaction between students with disabilities and their employers can also serve as a component of research as students with disabilities transition from college to the labor market.

Future research projects that examine success for students with disabilities can provide valuable insights into factors that contribute to positive educational outcomes and help shape inclusive policies and practices. Some potential research projects include:

Inclusive Teaching Strategies: Investigate the effectiveness of various inclusive teaching strategies in improving academic outcomes for students with disabilities.

Assistive Technology Impact: Examine the impact of different assistive technologies on learning, engagement, and overall academic success for students with disabilities.

Transition to Higher Education: Explore the factors that contribute to a successful transition from high school to college for students with disabilities, including the role of support services, accommodations, and social networks.

Post-Secondary Outcomes: Investigate the long-term outcomes for students with disabilities after they complete their higher education, including employment rates, job satisfaction, and social integration.

Universal Design in Higher Education: Assess the effectiveness of Universal Design principles in enhancing accessibility, usability, and inclusivity in college facilities and digital platforms.

Faculty and Staff Training: Evaluate the impact of faculty and staff training programs on their attitudes, knowledge, and practices related to supporting students with disabilities.

Peer Mentoring Programs: Investigate the effectiveness of peer mentoring programs in promoting academic success, social integration, and self-advocacy skills among students with disabilities.

Mental Health and Well-Being: Examine the relationship between mental health and academic success for students with disabilities and identify strategies to support well-being in higher education settings.

Support System Involvement: Explore the role of parental, family, friends, and other types of support system involvement in the academic success of students with disabilities in higher education, including communication, advocacy, and support.

Comparison of Disability Support Models: Compare the effectiveness of various models of disability support services in higher education institutions, such as centralized versus decentralized approaches, to identify best practices for serving students with disabilities.

These research projects can help identify barriers, facilitators, and best practices for supporting the success of students with disabilities in higher education. The results can be used to inform policies, interventions, and resource allocation decisions that create more inclusive and supportive learning environments.

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