University of Arkansas, Fayetteville
ScholarWorks@UARK

Theses and Dissertations

12-2017

A Phenomenological Study of the Online Education Experiences of College Students with Learning Disabilities

Michael Murders
University of Arkansas, Fayetteville

Follow this and additional works at: http://scholarworks.uark.edu/etd

Part of the Higher Education Commons, Online and Distance Education Commons, and the Special Education and Teaching Commons

A Phenomenological Study of the Online Education Experiences of
College Students with Learning Disabilities

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctorate of Education in Higher Education

by

Michael R. Murders
Park College
Bachelor of Science in Computer Science, 1995
Troy State University of Montgomery
Master of Science in Computer Information Science, 1998

December 2017
University of Arkansas

This dissertation is approved for recommendation to the Graduate Council.

_____
Dr. Michael Stephen Hevel
Dissertation Director

_____
Dr. Ketevan Mamiseishvili
Committee Member

_____
Dr. Karen Hodges
Committee Member

Abstract

The body of research concerning college students with learning disabilities is sparse relative to the percentage of college students with learning disabilities who attend college. Further, the majority of existing research fails to capture the student voice and the lived experiences of the students themselves. The purpose of this study was to explore the experiences of college students with learning disabilities who utilized online education at a public university centrally located in the United States, resembling numerous comprehensive regional universities. Using a qualitative, phenomenological research framework, this study uses in-depth individual interviews to collect data from eight participants. Interviews were recorded, transcribed, and thematically analyzed. Four categories emerged as central to their experiences as college students with learning disabilities: (1) faculty engagement, (2) student engagement, (3) course organization, and (4) needed resources. These four categories and their interconnections resulted in five major themes determined to be the results of this study: (1) students with learning disabilities like the convenience and flexibility of schedule afforded by online classes, (2) online structure and organization affords students with learning disabilities more time to process and understand information (3) students with learning disabilities feel more independent and confident with the structure and organization of online courses, (4) students with learning disabilities perceive a lack of interaction in online classes, and (5) instructors lack understanding and support of accommodations and students with learning disabilities.

This study provides numerous opportunities for future research related to the topic and findings. The findings from this study may also provide context and insights for postsecondary institutions, faculty, student services personnel, and family of students with learning disabilities, as well as the students themselves.

Acknowledgements

I would like to thank my family for helping me so much during this process. My wife, Leslie, has supported me from the day we married through my AAS, BS, MS and now my doctorate. Her endless support means more than she will know. My three daughters, Marisa, Kristen, and Brittany, have been my inspiration to continue even when it seemed I would never make it.

I would like to thank my coworkers over the years who have given me so much support, guidance, and encouragement. If they had not been there to guide me, I am not sure I could have kept going. I also want to express my sincerest gratitude to the Air Force for the life-long opportunities that allowed me to follow this path. In addition, I could never have met my academic goals without the education benefits bestowed to me.

Finally, I want to thank my committee. Dr. Michael Hevel, thank you so much for supporting me and guiding me through this process. It has been a long and difficult road. When I would get frustrated, I could always count on you redirecting me back to the right path. I would like to thank Dr. Ketevan Mamiseishvili and Dr. Karen Hodges for your continued support and thought provoking questions. Your unwavering support is greatly appreciated. Without you three, I would not be here today.

Dedication

I would like to dedicate this to my grandfather who passed away in May 1997. He was always proud that I was the first in our family to graduate college. Although he let me know how proud he was, he also told me never stop pursuing my education. I remember shortly after graduating college he stated "when are you starting that Masters." I did not know he even knew what a Master's degree was. Although he did not get to see me earn my graduate degrees, I know he is watching over me and giving me a shove when I need it. He may not be here physically, but I know he is watching over me. Thank you, Grandpa. I love you and miss you every day!

Table of Contents

List of Tables and Figures

Chapter 1: Introduction

This dissertation explores the experiences of postsecondary students with learning disabilities with online education. Chapter 1 begins with the introduction and background information about postsecondary students with learning disabilities, pertinent legislation, and the challenges they face in higher education followed by two current, interrelated trends in higher education: (1) a consistent increase in enrollments of students with learning disabilities, and (2) a mounting dependence on online education to provide flexible and reliable educational opportunities for postsecondary students. Additionally, this chapter identifies the *what* (problem statement, purpose of the study, research questions, and objectives), the *why* (significance of this study and conceptual framework), and the *how* (conceptual design, theoretical sensitivity, analytic rigor, parameters of the study, and limitations) of this study.

Background

Many biases, misunderstandings, and unfounded perceptions exist concerning students with learning disabilities. Students with learning disabilities are often labeled as lazy or lacking motivation by professors who believe these students use their learning disabilities as excuses to avoid course work (Lock & Layton, 2001). Many students with learning disabilities describe being considered less intelligent, competent, or industrious as nondisabled students, as well as being perceived as attempting to gain an unfair advantage when requesting accommodations; others express feelings of being misunderstood and needing to work harder than their nondisabled peers (Denhart, 2008). Due to the fear of humiliation and the stigma of being different, college students labeled with learning disabilities often avoid using their legally mandated accommodations that could ease their workload and improve their chances for

academic success, fearing they would be characterized as being lazy or unmotivated (Denhart, 2008).

In addition to unjust perceptions, postsecondary students with learning disabilities face unique challenges in order to be academically successful. Conley (2007) proposed that successful academic achievement in college includes knowledge of course content, writing skills, study skills, critical thinking, and contextual skills such as knowledge of college policies and expectations. Additionally, research suggests that critical attributes such as motivation, social support, and self-efficacy are associated with academic achievement in college (Milsom & Dietz, 2009). Learning disabilities may negatively affect each of these characteristics; therefore, students with learning disabilities often have more difficulties with tasks considered essential for student success. College instruction requires students to read for information, and apply and manipulate learned information, as well as self-monitor these activities (Gregg, Coleman, Davis, Lindstrom, & Hartwig, 2006; Skinner, 2004; Taymans & West, 2001). As a result, students with learning disabilities can struggle with the academic skills necessary to learn, such as reading complex content material, taking notes, conducting research, writing papers, and developing oral presentations. To minimize the impact of these study skill deficiencies, appropriate accommodations and supports are essential to achieve success in postsecondary courses (Lindstrom, 2007).

Postsecondary education has historically entailed attending traditional brick-and-mortar institutions of higher education. However, in an increasingly more technologically dependent society, higher education has adapted its method of delivery of course material beyond the physical classroom and into the electronic mediums available to students today. With online education being offered by numerous institutions nationwide, it becomes important for

institutions to discover the best practices to ensure the highest level of accessibility of online education to all students. Postsecondary institutions must accept the responsibility to support online education and adequately accommodate the needs of students with learning disabilities, allowing equal access to services, resources, and learning opportunities for all students to fully engage in postsecondary education. Success for college students with learning disabilities depends on access to the appropriate learning environment, as well as the necessary accommodations and resources. With continuous technological advances, online education has become a viable and readily utilized alternative for students in higher education. According to Vincent (1995), technology in education is frequently implemented without thought to who may use it: "when a technology-led approach is adopted, and the needs of the individual who might use the technology are an afterthought" (p. 87). The results of this study will help higher education leaders promote the success of students with learning disabilities enrolled in online education.

Pertinent Legislation

Although no single U.S. law or court decision explicitly defines how online courses must be designed and constructed to provide access to all students, lawmakers have passed a combination of laws over the years to, in part, meet the needs of the growing number of students with learning disabilities entering higher education. These include the Vocational Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA) of 1990, both of which mandate equal access for all students enrolled in a postsecondary institution. Due to the timeframe of their creation, both Acts focused on more traditional forms of student assistance such as physical access to the institution's buildings, note-takers, large print books, and assistive technology (Lewis, Farris, & Greene, 1999).

The foundational laws regarding access for individuals with learning disabilities were passed long before the advent and widespread use of the Internet. Section 504 of the Rehabilitation Act, Public Law 93-112, was enacted in 1973, a product of controversy and compromise between President Nixon and Congress (Rothstein, 1997). This law provided individuals with learning disabilities with civil rights protection against discrimination by any organization that accepted federal financial assistance, including postsecondary institutions (Rothstein, 1997). According to the Office of Civil Rights (2013), Section 504 requires postsecondary institutions to provide students with learning disabilities appropriate educational services designed to meet their needs to the same extent as meeting the needs of students without disabilities. An appropriate education for a student with a learning disability under the Section 504 regulations could consist of education in regular classrooms, education in regular classes with supplementary services, and/or distance education (Office of Civil Rights, 2013).

The ADA of 1990 applies to programs and services offered by both private and public institutions of higher learning (Edmonds, 2004). The purpose of this law was to guarantee civil rights for all persons with disabilities "in employment, public services, and accommodations" (Henderson, 2000, para. 2). According to Edmonds (2004), the ADA prohibits postsecondary institutions from discriminating against students with learning disabilities, including exclusion from equal access to educational services. As of now, there are no specific regulations regarding accessibility of information technology in the ADA (Edmonds, 2004). Although ADA regulations require communication with people with learning disabilities to be as effective as communications with others, these regulations afford no specific guidance regarding what postsecondary education institutions must do to make online distance education accessible to

students with learning disabilities (Americans with Disabilities Act of 1990, 1991; Edmond, 2004).

Because Congress found that people with learning disabilities experienced significant barriers with the growing dependency on information technology, it amended Section 508 of the Vocational Rehabilitation Act in 1998. This law is the only federal regulation specific to information technology accessibility and has the most implications for online education. This update required that all federal agencies ensure that information technology is accessible to people with disabilities who are seeking information or services from a federal department or agency (Edmonds, 2004). Although the amended Section 508 initially applied only to federal programs and services, "the U.S. Department of Education authored a letter indicating that they interpreted Section 508 to have application to state entities, including some public colleges and universities" (Heumann & Seelman, 1999, as cited in Edmonds, 2004, p. 53).

Although the United States has implemented a patchwork set of laws related to accommodations and online accessibility, the laws prior to 2010 have not had the effect of making the Internet widely accessible to persons with disabilities. The U.S. Access Board, a federal agency that promotes equality for people with disabilities through leadership in accessible design and the development of accessibility guidelines and standards for the built environment, transportation, communication, medical diagnostic equipment, and information technology, led a surge in federal government focus on accessibility in 2010 (Wentz, Jaeger, & Lazar, 2011). In March 2010, the U.S. Access Board released a draft for public comment of the first major revision of Section 508 as well as the accessibility provisions of the Telecommunications Act (Lazar & Jaeger, 2011; Wentz, Jaeger, & Lazar, 2011). The intent was that new guidelines would include telephones, cell phones, mobile devices, computer software

and hardware, websites, electronic documents, and media players (Lazar & Jaeger, 2011). The implementations of these newest guidelines strengthens the principles of accessibility considerably, although they continue to focus primarily on sensory and motor impairments and less on cognitive disabilities.

Likely as a reaction to numerous legal actions taken against colleges and universities beginning in 2009 (Wentz, Jaeger, & Lazar, 2011), the United States Departments of Education and Justice jointly issued a letter in 2010 to presidents of colleges and universities expressing concern over the use of emerging technologies, specifically electronic book readers that are inaccessible to students who are blind or have low vision (U.S. Department of Justice and U.S. Department of Education, 2010). Because many e-book texts and readers are not inherently accessible to readers with visual impairments, the movement by some universities to require the use of e-books neglected the needs of students and faculty with visual impairments. This means that educational institutions must consider the accessibility of not just the Internet and computers, but also of newer mobile, Internet-enabled technological devices as well. There is no prohibition against using accessible e-book readers or other mobile devices, just the obligation for educational institutions to ensure that any of these that they adopt are not going to exclude students and faculty with disabilities.

In July 2010, the Department of Justice also began pursuing a series of revisions to the ADA to account for changes in technology and society since the passage of the law (Gordon & Kundra, 2010). These updates include website accessibility. This proposal extended the coverage of the ADA to the websites of all entities covered by the ADA to include local and state governments and places of public accommodation. Additionally, these new requirements of the ADA apply widely to online entertainment and commerce, settling the discrepancies in the courts

about the applicability of the ADA to e-commerce (Wentz, Jaeger, & Lazar, 2011). Finally, in October 2010, President Obama signed the Twenty-First Century Communications and Video Accessibility Act of 2010 into law, which includes provisions to: (1) expand the use of closed captioning and video description for online content; (2) facilitate accessible advanced communications equipment and services such as text messaging and e-mail; (3) promote access to Internet services that are built into mobile telephone devices such as smartphones; and (4) require devices of any size to be capable of displaying closed captioning, delivering available video description, and making emergency information accessible (Wentz, Jaeger, & Lazar, 2011). All of these directives during this period are important steps in advancing equal access online and providing more accessible content, software, and hardware to students with learning disabilities.

Increase in Students with Learning Disabilities

People with disabilities constitute the nation's largest minority group, and this number is projected to double in the next 20 years (Disability Funders Network, 2012). Between 1990 and 2000, the number of Americans with documented disabilities increased by 25%, outpacing any other subgroup of the U.S. population. Additionally the 2010 Census indicated that 54 million Americans have been identified with a disability, an 8% increase from the 2000 Census (U.S. Census Bureau News, 2010).

Because disability legislation has helped make postsecondary education a more realistic option for students with disabilities, these students are attending college in increasing numbers (DaDeppo, 2009; Heiman & Precel, 2003; Orr & Hammig, 2009). According to the Disability Funders Network (2012), 2.3 million undergraduate and graduate students disclosed their disabilities in 2004, more than twice the 1.1 million reported in 1996. Orr and Hammig (2009)

reported that 1 out of every 11 undergraduate students declare having a disability. Similarly, Snyder and Dillow (2011) in the Digest of Education Statistics (2010) documented that 10.8% of undergraduates surveyed in 2007-2008 had a disability.

Students with learning disabilities are the largest subgroup of students with disabilities (Orr & Hammig, 2009), as well as the fastest growing subgroup (Brinckerhoff, McGuire, & Shaw, 2002). The number of students with learning disabilities tripled in the 1990s (Brinckerhoff et al., 2002). In 1998, 40% of first-year students with some kind of disability reported having a learning disability (Heiman & Precel, 2003). Similary, Wolanin and Steele (2004) stated that students with learning disabilities comprised between 46 to 61% of all students with disabilities enrolled in postsecondary education. With the increased number of students with learning disabilities attending college, educators must recognize and prepare for the diverse learning needs of these students.

Unfortunately, retention and graduation rates of these students are not achieving the same pattern as the growth in enrollment, with many students with learning disabilities dropping out during their first year of college (Belch, 2004). This fact becomes more evident for students with learning disabilities in a longitudinal study conducted by Murray, Goldstein, Nourse, and Edgar (2000). In their study comparing students with learning disabilities and students without learning disabilities who attended the same postsecondary institution, significant differences in graduation rates were found. Two cohorts, those graduating high school in 1985 and those in 1990, from each group, with and without learning disabilities, were evaluated for their ability to graduate college. The graduation rates at five years revealed that 11.8% of the participants without learning disabilities graduated from a community college and 24.2% from a four-year institution. In contrast, only 3.6% of the participants with learning disabilities graduated from a community

college or four-year institution. As more students with learning disabilities enroll in postsecondary education, colleges and universities must proactively provide services necessary for their success (Cole & Cain, 1996).

Increasing Reliance on Online Education

At the same time as students with learning disabilities are enrolling in college in increasing numbers, the popularity of online education courses in higher education is exploding. According to Fish and Wickersham (2009), there were more than 54,000 online courses offered in 2004 across the United States, and enrollment reached 2.35 million nationwide (Ashburn, 2006). Online education is being offered in all of the 50 states (Miller & King, 2003) and accounts for 20% of all continuing and professional education courses (Ashburn, 2006). Similar results were documented by Allen and Seaman (2011) in the 2011 Survey of Online Learning that revealed that the number of students taking at least one online course now surpasses 6 million students, and nearly one-third of all postsecondary students are taking at least one online course. Furthermore, the growth in the overall higher education student population of a mere 2% is overshadowed by the 10% increase in online course enrollments (Allen & Seaman, 2011).

Since many institutions are now offering online courses, they have evolved into a fundamental part of the learning experience for many postsecondary students. No longer are institutions with a mission of distance learning exclusively providing online courses; rather, campus-based universities and colleges are systematically integrating this pedagogy into nearly all programs. In the United States, nearly 20% of higher education students were taking at least one online course in Fall 2007 (Ko & Rossen, 2010). This represented over 3.9 million online students, which was a 12% increase over the previous year (Wickersham & McElhany, 2010).

Online learning can promote collaborative learning opportunities and connections to a diverse student population that may not be possible in a traditional learning environment (Mitchell, 2010). Additionally, online education provides new opportunities for students who may be excluded from attending postsecondary education due to physical limitations, life situations, or lack of local institutions in the immediate area (Belanger & Jordan, 2000). Furthermore, online courses are becoming increasingly more accepted due to the inherent flexibility of learning "anytime, anywhere" (Nandi, Hamilton, & Harland, 2012). The growth of students selecting online education suggests that the obstacles of attending in-class courses may hinder participation in postsecondary education. Access to online education is not just a popular option, but also necessary for many postsecondary students (Wallhaus, 2000). The continuous development of online courses, entire programs being placed online, and the ability to complete degrees online illustrates that online education is not just a passing fad.

As empirical data suggests learning outcomes in online courses are comparable to face-to-face courses, academic leaders increasingly perceive the learning outcomes for online education to be "as good as or better" than those for face-to-face instruction (Allen, & Seaman, 2013). The 2012 Survey of Online Learning results showed some small positive increase in the academic leaders' perceptions in the quality of online instruction as compared to face-to face instruction (Allen, & Seaman, 2013). This report noted that in the original report of this annual series in 2003, 57% of academic leaders rated the learning outcomes in online education as the same or superior to those in face-to-face. In 2012, that number grew to 77%. A minority of 23% of academic leaders continue to believe online education is inferior to face-to-face instruction, but most of these leaders come from institutions with no online offerings.

One of the major reasons academic leadership at postsecondary institutions developed online courses and programs was to generate new revenue and to potentially gain the cost-effective benefits from online education. Equal quality online programs will never be as cost effective as large classrooms (Bell & Federman, 2013; Kyle & Festervand, 2005). Bacow et al. (2012) reported that relatively few postsecondary institutions believe online education reduces their costs, but in fact, they believe the per capita cost of providing online courses is substantially higher than providing traditional classroom courses. This viewpoint is based primarily on the significant startup costs for new technology, course design, and instructor training, as well as the reoccurring maintenance, upgrades, and faculty expenses (Bacow et al., 2012). Therefore, online programs are more expensive when the student-to-faculty ratio is small (Kyle & Festervand, 2005).

Online learning has the potential to increase higher education's student enrollment, while at the same time being an important moneymaking venture. One such promise was that online education could help higher education's limited budgets by avoiding additional costs, increasing access to more students, reducing current costs, improving cost-efficiencies, and offering massive program customization and flexibility (Meyer, 2006). Online education is frequently considered a silver bullet by legislators, governors, and board members as the means to educate more citizens more efficiently while earning more tuition dollars.

Statement of the Problem

Current trends in online education indicate a radical shift in both instructional design and pedagogy (Beldarrain, 2006). Online education offers many educational tools providing students direct access to a wide spectrum of education and training opportunities only dreamed of 10 to 15 years ago. To take advantage of these options, postsecondary educators must harness online

learning technology by designing and delivering course content while being responsive to the individual requirements and characteristics of all learners, including students with learning disabilities (Kaufman, 1998). Online education has become an important facet of higher education for many students with learning disabilities. They are attracted to online courses because the formats appear to be more accessible than traditional brick-and-mortar classes (Coombs, 2010; Disability Compliance for Higher Education, 2013). However, research has highlighted the dual nature of digital technology to enable and deny access (Seale, 2006). With so many postsecondary institutions using online education to meet education accessibility needs, higher education leaders must develop and share plans, policies, and procedures for online education in order to meet the needs of students with learning disabilities (Cintrón, Dillon, & Boyd, 2001; Epper, 1997).

Online education is advertised as facilitating "anytime/anywhere" learning, and has the potential to suit the needs of any learner if accessibility issues are addressed appropriately. For many postsecondary students with learning disabilities, traditional education is largely inaccessible. In recent years, society has witnessed tremendous increases in the number of technologies used in online courses, in the number of online courses available, and in the number of students taking these courses (Allen & Seaman, 2013; Kim-Rupnow, Dowrick, & Burke, 2001; Kinash, Crichton, & Kim-Rupnow, 2004; Phillips, Terras, Swinney, & Schneweis, 2012). The overarching theme throughout the literature is that improving accessibility of online education for students with learning disabilities will promote best practices in online education for all students (Klemes, Epstein, Zuker, Grinberg, & Ilovitch, 2006; Lazar, Dudley-Sponaugle, & Greenidge, 2004; Lewis & Abdul-Hamid, 2006).

Students who have learning disabilities comprise the largest group of learners with disabilities. Nonetheless, many instructional designers do not attempt to incorporate accessibility for these individuals with cognitive impairments into online courses because they believe that this group of students is not the target population for their services and that providing accessibility to individuals with learning disabilities might present an undue burden (Rowland, 2004; Wimberly, Reed & Morris, 2004). As required by federal legislation, instructors, including those teaching online, are obliged to make reasonable modifications to accommodate students with learning disabilities. Over the past decade, new technologies have transformed educational access, and in no domain more dramatically or successfully than in the education of students with learning disabilities (Rose, Hasselbring, Stahl, & Zabala, 2005). Slatin (2002) wrote:

> None of us would knowingly build a course Web site that students of color, or students who are women, or students who are men, would be unable to use simply by virtue of their racial or ethnic status or their gender. It should be equally unthinkable for us to design Web resources for our classes that are inaccessible to students or colleagues with disabilities simply because of those disabilities. It's no less morally wrong to discriminate against individuals on the basis of disability than on the basis of race or gender or creed, and it's no less against the law. (para. 1)

This excerpt offered a compelling and persuasive case supporting social justice and equal access for online learning.

Slatin (2002) and many other supporters for social justice have sought to convince higher education practitioners that accessibility in online education is critical. Seale (2013) identified four major reasons for such importance:

1. Legal reasons: make e-learning accessible or you will be punished;
2. Business reasons: make e-learning accessible and you will make profit;
3. Moral reasons: make e-learning accessible because it is the right thing to do;
4. Pedagogic reasons: make e-learning accessible and students will have a better learning experience. (p. 2)

Increasing access is a common reason given by most postsecondary institutions for providing

online learning instruction. However, this argument usually focuses on students separated by

distance and time, and it seldom considers the needs of students with learning disabilities.

Furthermore, the design of online education can create barriers to prevent full participation of

students with learning disabilities (Burgstahler, 2009). As a group, students with disabilities are

among the least considered in the educational context of online education (Kinash et al., 2004).

The design of many online courses erects barriers and creates a learning environment

where many students with learning disabilities cannot fully participate (Burgstahler, 2002). In

addition, Burgstahler (2002) noted that students with learning disabilities face a second challenge

of accessing online education due to their lower ability to read, write, and/or process

information. Some students may acquire the necessary assistive technology through disability

support services or third-party retailers to help them gain access to the required educational

websites, though they often do not have sufficient access to the needed technology (Burgstahler,

Corrigan, & McCarter, 2004). Furthermore, assistive technologies may be inaccessible or

incompatible with the content delivered by the online course (Burgstahler, 2002; Burgstahler et

al., 2004; Opitz, 2002). For example, word prediction software is a computer-based technology

that can help students with learning disabilities communicate with written language more easily

by allowing students with mild learning disabilities to express their words and ideas in the

vocabulary that more closely reflects their thinking, rather than in the vocabulary that is easiest

to spell. Therefore, with the assistance of word prediction software, students with mild learning

disabilities are better able to compete academically in online environments (Hasselbring &

Glaser, 2000). As the number of students with learning disabilities and the offerings of online

education continue to expand, their experiences and perceptions of online education are worthy of exploration.

Purpose of the Study

The purpose of this qualitative study was to discover the experiences of college students with learning disabilities in online education. A central goal was to improve online education for students with learning disabilities (Burgstahler et al., 2004). As established in the preceding sections, students with learning disabilities and online courses are increasing across higher education institutions; thus, the needs of students with learning disabilities in online education must be addressed in order to provide equal access as directed by federal regulations. Unfortunately, postsecondary students with learning disabilities must first decide to disclose their disabilities; thus they are expected to have the understanding and skills to advocate for their own needs and to have the knowledge of the types of accommodations needed in order for them to experience the greatest level of success (Joyce & Rossen, 2006).

There has been little research with regard to students with learning disabilities in online education. Therefore, this study adds to the limited knowledge base of information with regard to students with learning disabilities in online education. The study will offer insights for higher education professionals to increase the successful participation of students with learning disabilities in online education.

Research Questions

This study explores the following main research question:

- How do students with learning disabilities experience online education?

Research Sub-questions

This study solicits and answers the following sub-questions:

- Why do college students with learning disabilities choose online education?

- When given a choice, how do students with learning disabilities decide to take a course either through the traditional classroom or online learning?

- What are the benefits that college students with learning disabilities experience with online courses?

- What are the drawbacks and barriers that college students with learning disabilities experience with online courses?

Significance of the Study

This research could be valuable to college and university faculty teaching online or hybrid courses, potential and current postsecondary students with learning disabilities, and student affairs professionals providing academic guidance to students with learning disabilities in higher education. As both the increasing enrollment of students with learning disabilities in higher education (Orr & Hammig, 2009) and the growth of online education (Allen & Seaman, 2012; Fish & Wickersham, 2009) continue to coincide, the ability to design and implement courses that meet the needs of students with learning disabilities will become increasingly more significant (Poore-Pariseau, 2010). Additionally, if the use of online education continues to grow, faculty and instructional designers need research to assist them to efficiently and effectively utilize emerging technologies to meet the academic needs of a wide variety of students (Bacow, Bowen, Guthrie, Lack, & Long, 2012).

Theoretical Framework

This research study utilized two theoretical frameworks to enrich the understanding of the participants' experiences and perceptions. Such studies involve conceptual thinking, that is,

"working with words and ideas in terms of their connections and relationships" (Gredler & Shields, 2008, p.75). This necessitates thinking that needs to be organized and accessible to the participants and researcher throughout the process of study, as well as to the readers at the end. The theoretical frameworks in this study were useful in: 1) defining the research problem; 2) establishing theoretical coherence; 3) organizing research design and implementation; and 4) framing conceptual conclusions.

Self-Efficacy

Bandura's Self-Efficacy Theory analyzes people's interpretation of their well-being, motivation, and accomplishments (Bandura, 1995). Bandura and Adams (1977) contended that "perceived self-efficacy affects people's choice of activities and behavioral settings, how much effort they expend, and how long they will persist in the face of obstacles and aversive experiences" (pp. 287-288). Self-efficacy theory has four components from which self-efficacy is developed: mastery experience, vicarious experience, social persuasion, and physiological and emotional states (Bandura & Adams, 1977; Bandura, 1995).

Self-efficacy is a key component to being successful in life. Having a greater sense of self-efficacy allows individuals to accomplish more concrete and difficult goals, to be resilient in the face of failure, and to remain motivated (Bandura, 1995). Students with learning disabilities often struggle in the face of adversity. They have difficulty in the college environment with the additional challenges of online education conditions. Using Bandura's Self-Efficacy Theory in this study will help investigate how students with learning disabilities perceive their online education and how it affects self-efficacy.

Social Model

Most people assume they understand and know what accessibility means because they assume they can imagine what it is like to have a disability; however, the term "accessibility" is ambiguous as access can come in many forms, including dependency on any type of device, services, or environmental situation. Accessibility to education is a continuous concern for those with physical or cognitive disabilities. Issues of social equality and accessibility are clearly expressed in disability studies. Disability studies have evolved along with disability activism, fostering strong connections between research and advocacy (Heyer, 2007). Furthermore, Heyer (2007) classified disability studies as an interdisciplinary field "that invites scholars to think about disability not as a question of medical cures or rehabilitation but as a social category on par with race, gender, class, and sexual orientation" (pp. 263-264). Issues of social equality and accessibility have influenced the decision for this study's conceptual framework to be guided by the Social Model of Disability. This model:

> does not deny the problem of disability but locates it squarely within society. It is not individual limitations, of whatever kind, which are the cause of the problem but society's failure to provide appropriate services and adequately ensure the needs of disabled people are fully taken into account in its social organization. (Oliver, 1996, p. 32)

The basic idea of the social model is that disabilities are not thought of at the individual level, but as a matter of society, transferring the responsibility to society to acknowledge and adjust to a person's limitations (Oliver, 1990). Oliver (1996) argued that by using a social model, one can understand disability as something that can be dealt with at a social level, and that it was not merely about non-normal characteristics of individuals but rather the ways in which society functions. According to Oliver's theory, social efforts including adjustments can mitigate a disability.

The social model is a proposed lens to view the disadvantages suffered by people with physical or mental impairments attributed to their environment (Samaha, 2007). For studying learning disabilities in academia, a social model of disability is foundational. It delineates this type of disability as a disadvantage caused by the convergence of two factors: (1) a person's physical or mental traits and (2) the surrounding environment, which is at least partly controlled by others (Samaha, 2007). Heyer (2007) also states that viewing learning disabilities through the lens of a social model requires questioning current social processes and structures in order to identify when and how the environment is not fully responsive to the needs of individuals with learning disabilities.

Utilizing the social model approach allows this study to reflect on how the difficulties and barriers society imposes on students considered different make learning disabilities a reality and portrays social injustice and inequality lived by excluded groups. As noted by Mitra (2006), this model allows researchers to analyze how disability results from the interaction between the individual's personal characteristics, resources, and environment. This study, based on the social model of disability, questions if the processes and structures of the online learning environment adequately accommodate the needs of students with learning disabilities, allowing them proper access to the services, resources, and information needed to fully participate in college learning. The following diagram expresses the researcher's interpretation of the online education environment viewed through the lens of the social model of disability as documented in Heyer (2007), Mitra (2006), and Samaha (2007).
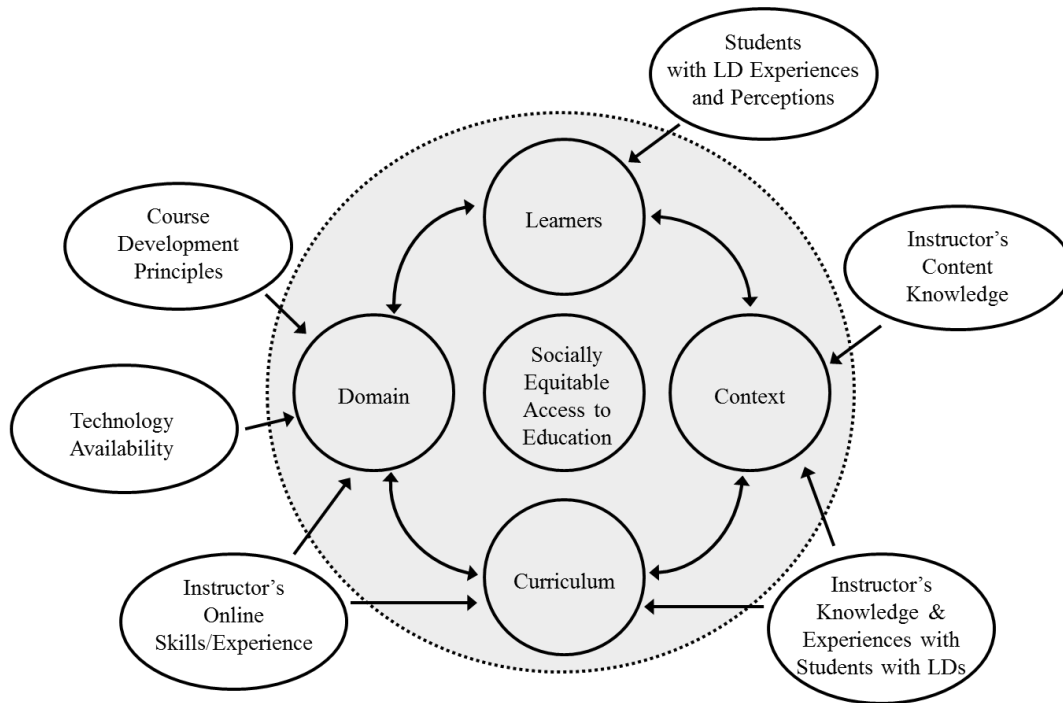
Figure 1. Social Model Environment

Theoretical Sensitivity and Positionality Statement

Theoretical sensitivity began with understanding the importance of my own values and attitudes within the research process. I took a critical look inward and reflected on my personal beliefs and professional experiences: "the theories we carry with us in our heads inform our research in multiple ways" (Strauss & Corbin, 1998, p. 47).

Professional Experience

I have been a full-time college instructor for over eight years, with about four additional years of adjunct experiences. I have taught at two vocational institutions, a community college, and two major universities. I am currently an academic affairs administrator at a small regional campus that provides technical and career education through 11 associate degrees and 15 technical certificates with a variety of industry-specific options, as well as general education coursework. During my time as full-time instructor, I taught 25 or more credit hours each fall and spring semester and 12 to 15 credit hours in the summer of freshman- and sophomore-level

20

courses in math, business technology, computer information, supply chain management, and new student orientation. I have also taught multiple sections of these courses in an online format and many in hybrid format (portions in-class and portions online). I have utilized learning management systems such as Blackboard for all of these courses to provide online collaboration, discussion, immediate grade access, and additional resources. My latest online experience included designing and developing an online degree program for an associate degree in Supply Chain Management.

I am somewhat embarrassed to say that it was not too many years ago that my attitude toward students with learning disabilities was not unlike many stereotypical college professors. I had major reservations about accommodations and fairness to other students, as well as ideas that these students were trying to avoid the rigors of hard work in order to succeed in college. The last four years I have worked with a majority of non-traditional, older students who are returning to college to gain knowledge and skills for new or advanced employment opportunities. I have in this time interacted with dozens, if not hundreds, of students with learning disabilities. Although there have been many, Johnny's (pseudonym) story encapsulates my regrets.

Johnny was just one more of the numerous students who had to take my Technical Math course in order to get a technical degree to pursue his new vocation. I worked many extra hours with students who struggled in math, but Johnny never committed to the additional time. I just assumed he did not care enough about math or general education to put forth any extra effort. After the final exam, Johnny asked me to step outside the classroom. Here stood a grown man, who works primarily with other men, beginning to tear up and break down. After realizing he may have failed his exam, Johnny pulled out some papers from his back pocket, unfolded them, and then handed to me. These papers were his formal accommodations. As I read the forms,

Johnny stated "I guess I should have given these to you in the beginning." I asked why he had

not, and he began to explain how being labeled as "special" in secondary school affected him

and how he wanted to be the same as everyone else. Johnny's pride and childhood experiences

prevented him from asking for the access he needed to get an education. Although I felt I had

failed Johnny in some ways, this experience changed my perspective and allowed me to

understand and empathize with many of my future students; thus, making me a better teacher.

Personal Experience

One reason for my jaded professional perception was that I had very little personal

experience with learning disabilities. I had enjoyed all of my time in school and college, and I

had been a successful student without any obstacles. As a parent, I had three daughters who all

did well in high school. I did experience the struggles of my friends who had children with

learning disabilities to get the secondary school system to evaluate, accommodate, and provide

equal education to their children. However, their efforts did not resonate with me as I did not

understand the severity of each of their situations.

After my enlightenment as an instructor, I have taken many opportunities during the past

four years to discuss the educational experiences with my friends' children with learning

disabilities. One such young man, Brandon, whom I consider a nephew, has shared his high

school experiences with me. Brandon has dyslexia, which caused him difficulties in nearly all of

his courses. After being diagnosed with dyslexia as a teenager, he was labeled as "different,"

"special," and "damaged." Brandon was the younger brother to a high school football star and

honor student. His teachers had expectations that he was never able to meet, and this was very

obvious to him. Brandon shut down and nearly gave up on graduating high school. A majority of

his teachers never provided the mandatory accommodations, even when his parents would

complain and protest. Not until one very experienced teacher intervened with Brandon's education did he begin to excel. Brandon's grade jumped from failing to "A"s and "B"s, and he did graduate high school on time. Brandon may not ever attend college, but that single educator who ensured equal access allowed him to be successful. Brandon will never forget nor stop appreciating being treated as an equal.

Knowledge of the Literature

The issue of the literature review in phenomenological studies remains a controversial topic, with the traditional researchers arguing that a literature review should not be conducted until after the analysis is completed (Hamill & Sinclair, 2010). Specifically, the debate is not whether a literature review should be conducted, but rather when it should be conducted and how extensive it should be (McGhee, Marland, & Atkinson, 2007). The rationale for this was based on the potential for introducing bias into the research. To avoid bias, Hamill and Sinclair (2010) suggested that the literature review be delayed until after data collection and analysis, so that the researchers do not phrase questions or analyze data for themes that they know exist in the literature. Hamill and Sinclair (2010) are not alone in this stance. Chan, Fung, and Chien (2013), explained that the delayed literature review helps to address the impact of the researchers' pre-understanding of the research question, and the researchers, then, can demonstrate that they have attempted not to influence the data analysis and collection process.

After highlighting the principle arguments against conducting an early literature review, it is critical to discuss the advantages of the alternative perspective. Firstly, from a purely pragmatic viewpoint, the idea of postponing a literature review until the data collection and analysis is well underway is impracticable for many researchers. This is particularly true for doctoral students, whose research, progression, and approval through the dissertation process is

heavily dependent upon documenting a detailed literature review prior to initiating the data

collection and analysis. This issue is acknowledged by several authors, including McGhee et al.

(2007), Nathaniel (2006), and Streubert and Carpenter (1999). Secondly, with limited personal

and professional experience, the literature review provided a clear rationale for this study,

including a justification for a specific research approach (McGhee et al., 2007). This also

allowed the researcher to gain theoretical sensitivity (McGhee et al., 2007; Strauss & Corbin,

1998) and to avoid criticism by informing the researcher about relevant literature at an early

stage. Thirdly, the literature review process ensured this study had not already been

accomplished (Alvesson & Sköldberg, 2000) while simultaneously highlighting gaps in existing

research (Creswell, 2012).

A preliminary activity in this study was to conduct a review of the literature related to

online education, postsecondary students with disabilities, and any studies investigating the use

of online education among postsecondary students with learning disabilities. This review was

undertaken to identify existing knowledge in the field and to provide a rationale for the conduct

of the proposed research (Creswell, 2012). Apart from our personal experiences and knowledge,

some ground work through the literature review is required in order to gain a better

understanding of the questions under the proposed study (Chan et al., 2013). This review laid the

foundation for the researcher's perspective—the necessary insight, capacity to understand, and

capability to separate the pertinent data from the irrelevant (Patton, 2015).

Parameters of the Study

This study focused on a single public university that enrolled slightly over 12,000

students in 2015. It has a Carnegie Classification of Master's L, is accredited by the Higher

Learning Commission, and is a member the North Central Association of Colleges and Schools.

Several of the university programs are individually accredited by state and national organizations. In addition, this University has developed a major online component offering multiple Associate, Bachelor, and Master online degree opportunities. The target population for this study consisted of this online component of the University currently enrolling approximately 910 students (nearly 9% of the main campus student population). This does not include all online courses offered at the institution, but illuminates the importance and reliance on the delivery using online technologies.

Definition of Terms

For relevant definitions and pertinent terms for consistent reference and understanding throughout this document, see Appendix G.

Limitations

As with all research, there are limitations to this study. First is the acknowledgement that qualitative data analysis is subjective and therefore susceptible to bias. However, the researcher's ability to identify and put aside any bias is a strength of phenomenological studies (Moustakas, 1994; Patton, 2015). Additionally, the validity of the gathered information is vital to the entire process; therefore, utilizing peer debriefing as a critical examination and evaluation by a qualified researcher outside the study design and data collection could also enhance the credibility to this study thereby eliminating a threat to quality (Lincoln & Guba, 1985; Zhang & Wildemuth, 2009). An external auditor was used to provide a review of the entire project and to provide an assessment throughout the research and at the conclusion of the study.

This study is a phenomenological study; therefore, the results are not intended to be generalizable to the rest of the population as a whole. Instead, they are intended to illuminate insight and context into the needs of this specific population of participants, postsecondary

students with learning disabilities (Creswell, 2012). The data in the study were based on the personal experiences of eight participants. A limitation of this case study is sample size related to the population it represents. When conducting research on a single individual, or a small group, they may not be a true representation of the general population (Yin, 2003). The results of this study are beneficial to future studies to the extent that the participants are truthful. This limitation was reduced by informing participants that they needed to be as truthful as possible.

Another limitation to the study was the quality and accuracy of responses given during the interview sessions. The researcher could only report the responses provided by the participants in the study and was dependent on the honestly and accuracy of the responses that the participants provided. Additionally, the amount of time available during the study to interview and observe the participants did lessen the amount of prolonged engagement available. Therefore, a limitation included the accuracy of the responses given by the participants (Creswell, 2012); however, the personal effect that this study lends will be an advantage as it elicits personal responses from the subjects, not just from surveys and tests.

Summary

This study explores the experiences of postsecondary students with learning disabilities with online education. This chapter illustrates how the field of learning disabilities and the field of online education intersect to push for the investigation of online education of postsecondary students with learning disabilities through the lens of the social model of disability. It discusses the equitable access to online education by highlighting accessibility guidelines and legislative regulations mandating the requirements of postsecondary institutions to provide web-based courses that are available to all students. The research in this area indicates numerous colleges and universities are not addressing issues of accessibility and usability of their online education

resources by students with learning disabilities, thus creating a need to explore the lived

experiences of students with learning disabilities enrolled in online education. This shortfall

motived the researcher to establish a theoretical understanding of accessibility issues as it

impacts the experiences of postsecondary students with learning disabilities interacting with

online distance education.

Organization of the Dissertation

This dissertation is divided into five chapters, the references, and an appendix section.

The first chapter has provided a brief introduction about postsecondary students with learning

disabilities, online education, pertinent legislation, the rationale for the study, the rationale for

selecting qualitative research methods, statement of the problem, and the research questions.

Chapter 2 will present a comprehensive review of the literature. The Chapter 3 will describe the

research methods including how participants will be selected, the forms of data collection, how

data will be analyzed, the validation strategies use to increase the validity and reliability of the

study, potential ethical issues, and the role and background of the researcher. Chapter 4 will

present and highlight the results of the analysis. Additionally, each participant's lived

experiences will be described in great detail along with the themes that emerged from clustering

all experiences. Finally, Chapter 5 will discuss the summary of the study, results of the study,

recommendations for future research, and limitations of the study. There will also be an appendix

section that includes copies of the internal review board approvals from University of Arkansas

and participating university, informed consent form, interview protocols, pre-interview

demographic questionnaire, and in-depth interview questions.

Chapter 2: Review of the Literature

Only in recent years has the use of the Internet and online tools to deliver postsecondary education occurred extensively. Additionally, federal regulations that require institutions to make accommodations for students with learning disabilities have only been strictly enforced through the Americans with Disabilities Act (ADA), Section 504 of the Rehabilitation Act, and the Individuals with Disabilities in Education Act (IDEA) since the early 1990s. Due to the limited implementation and timeline of these two areas, a narrow amount of research has been conducted on college students with learning disabilities in online education. Few studies have combined the two areas to determine how these college students with learning disabilities can effectively learn through online education. Despite the lack of studies combining the two concepts, numerous amounts of research and literature exist on the history of learning disabilities (Courtad & Bakken, 2011; Hallahan & Mercer, 2002; Hallahan & Mock, 2003), pertinent legislation protecting students with learning disabilities (Madaus, 2011; Madaus, Kowitt, & Lalor, 2012; Mull & Sitlington, 2003; Musick, 2001; Rumrill, 1994; Tandy & Meachum, 2009; Yocum & Coll, 1995), and the barriers to accommodations (Case & Davidson, 2011; Cook, Gerber, & Murphy, 2000; Hartman-Hall & Haaga, 2002; Phillips et al., 2012; Smart, 2008; Yocum & Coll, 1995).

Research about online learning has mirrored the significant expansion of this delivery format. Although only a few studies have explored students with learning disabilities in online education, numerous studies have considered online learning and the general population of college students (Darrington, 2008; Fish & Wickersham, 2009; LaPointe & Reisetter, 2008; McGinnis, 2010; Merrill, 2003; Miller & King, 2003; Pea & Roschell, 1999; Reisetter & Boris, 2004; Silc, 1998; Song, Singleton, Hill, & Koh (2004); Zsohar & Smith, 2008). Numerous

studies have also been conducted in the related and applicable area covering the impact that

technology has played on students with learning disabilities (Fichten, Asuncion, & Scapin, 2014;

Jimenez et al., 2003; Mull & Sitlington, 2003; Petrides, 2002). Significant research shows how

computer-based technology can produce positive effects on students with learning disabilities if

properly utilized (e.g., Myhill et al., 2007; Rose et al., 2005; Seale, 2006; Shachar & Neumann,

2010; Simoncelli & Hinson, 2010).

The following is a summation of the literature and research on the backgrounds of

disabilities and learning disabilities, the in-depth use of online education and perception from

multiple viewpoints, and the current state of postsecondary students with learning disabilities

utilizing online education to establish the rationale for the importance of this study.

<div align="center">

Learning Disability Background

</div>

Definitions and Scope

To understand the issues related to learning disabilities, it is first important to define the

concept and to understand what this term includes and excludes. Numerous conceptual

definitions of learning disabilities have been proposed by experts in the field (Hammill, 1990);

however, most experts recognize that learning disabilities represent a unique disability group

who demonstrate unexpected learning failure and specific learning failure (Fuchs, Mock,

Morgan, & Young, 2003). As defined by Snyder and Dillow (2012) in the *Digest of Education*

Statistics 2011:

> Having a disorder in one or more of the basic psychological processes involved in
> understanding or in using spoken or written language, which may manifest itself in an
> imperfect ability to listen, think, speak, read, write, spell, or do mathematical
> calculations. The term includes such conditions as perceptual disabilities, brain injury,
> minimal brain dysfunction, dyslexia, and developmental aphasia. The term does not
> include children who have learning problems which are primarily the result of visual,
> hearing, or environmental, cultural, or economic disadvantage. (p. 851)

Simply stated, "learning disabilities" is an umbrella term for a broad array of learning disorders affecting information processing, basic understanding, and spoken or written language (Corley & Taymans, 2002).

History of Learning Disabilities

Learning disabilities are one of the newest categories of special education officially recognized by the U.S. Department of Education, but the origins of the concept are long-standing. According to Hallahan and Mercer (2002), learning disabilities began to emerge as a formal category in the United States from 1960 to 1975. During this period, the term "learning disabilities" was introduced; the federal government recognized learning disabilities as a formal disability category; professional organizations for learning disabilities were established to provide support and advocacy for those with learning disabilities and their families; and instructional programming and educational strategies for students with learning disabilities emerged (Hallahan & Mercer, 2002; Hallahan & Mock, 2003). Until this time, children with learning disabilities were excluded from advocacy services that are typical today (Fletcher et al., 2002).

The following period from about 1975 to 1985 was a period considered to be relative stable as special education moved toward consensus on the definition of learning disabilities, as well as methods of identifying students with learning disabilities (Hallahan & Mercer, 2002; Lyon et al., 2001). It was a period of considerable applied research that resulted in empirically validated procedures for educators working with students with learning disabilities. Additionally, the term learning disability gained rapid acceptance during this period because it was perceived not to stigmatize children by claiming the lack of intelligence, emotional disturbance, or troubled home life (Lyon et al., 2001). In 1975, Congress passed the Education

for All Handicapped Children Act, Public Law 94-142, which is now referred to as the

Individuals with Disabilities Education Act (IDEA). This new law created two important aspects

for people with learning disabilities. First, it mandated that all children with learning disabilities

must be educated. Secondly, it provided federal funds to help assist state and local educational

agencies in providing the special education and related services needed to meet the unique needs

of students with learning disabilities (Hallahan & Mercer, 2002; Lyon et al., 2001).

During the period of 1976 to 2000, researchers focused on empirically validated applied

research (Hallahan & Mock, 2003). This research influenced the legislative definition of learning

disabilities (Hallahan & Mercer, 2002), which in turn determined, and continues to determine,

the nature of services that are provided to students with learning disabilities (Seale, 2013). The

landmark literature review by Hughes and Smith (1990), who investigated more than 100 articles

published in a 20-year span on postsecondary students with learning disabilities, highlighted the

trends used to identify students with learning disabilities, the cognitive characteristics, and their

academic deficiencies (Sparks & Lovette, 2009). The research during this period was the

foundation for much of the legislative enforcement efforts incorporated at the secondary and

postsecondary levels as discussed in Chapter 1.

Social Integration Issues

Students with disabilities often lack the academic, personal, and social skills needed to

integrate themselves into higher education (Brinkerhoff, McGuire, & Shaw, 2002). Learning

disabilities affect not only academic and vocational functions, but they also can affect social

relationships and family dynamics (Skinner, 2004). Social information processing is considered

one of the most challenging areas of life for students with learning disabilities. According to

Bauminger and Kimhi-Kind (2008), this requires that these individuals draw on their cognitive

skills such as attention, memory, reasoning, focusing, and processing information, and these

skills are highly likely to be impaired. This may result in social-emotional difficulties, including

limited emotion recognition skills, poor social skills, and peer rejection (Bauminger & Kimhi-

Kind, 2008). One component of social skills that some students with learning disabilities may

lack is social perception (Bryan, Burstein, & Ergul, 2004). For example, an individual may be

unaware of personal space or misperceive social situations. At the postsecondary level, this may

manifest itself through frequent interruptions of peers or professors during class discussions, or

an inappropriate reaction to sensitive topics. Some social problems may relate to spoken

language disorders; however, the majority of social relationship issues stem from an individual's

lack of understanding on how to act and what to say to people in specific social settings

(Bauminger & Kimhi-Kind, 2008). In the college environment, students with learning disabilities

may struggle with group projects, communicating ideas, or demonstrating comprehension of

course content during class discussions (Bauminger & Kimhi-Kind, 2008).

In a study that examined the role of academic and social integration considering the

persistence of students with learning disabilities, DaDeppo (2009) found that while both

academic and social attributes were important, social integration was the strongest predictor of

academic success and diligence. DeDeppo (2009) rationalized that because students with

learning disabilities are more likely to experience academic challenges than their non-disabled

peers, those who persist beyond their freshman and sophomore years may "compensate by

relying more on their social support systems" (p. 128). Several additional studies highlight

observations on the negative impact of social isolation for students with learning disabilities in

online courses (Bryan et al., 2004; Madaus, Banerjee, McKeown, & Gelbar, 2012; McInnerney

& Roberts, 2004; Perrucci, Balboni, & Cacciamani, 2008). It is important to note, however, that

not all students with learning disabilities have difficulty with such social skills or in establishing and maintaining relationships.

Barriers to Accommodations

Students with learning disabilities continue to experience barriers to educational opportunities. These college students were found to experience difficulties in reading, mathematics, and writing. Hughes and Smith (1990) analyzed empirical reports on the academic achievement and cognitive abilities of college students with learning disabilities and concluded that "college students with LD do not read as well as their nonhandicapped [sic] peers...given the high volume of reading required in postsecondary settings, college students with LD are at a distinct disadvantage" (p. 71). Further, they found that students with learning disabilities experience difficulties in basic computations and application to more complex and abstract mathematics such as geometry and algebra (Hughes & Smith, 1990). They also noted "written expression appears to be one of the most pervasive problems for college students with learning disabilities" (p. 73). It is important to note that not all students with learning disabilities will experience difficulties in all three academic areas, but many of these students require academic accommodations to be successful at college.

Considering the dramatic increase in the numbers of students with learning disabilities, postsecondary institutions are struggling to identify effective procedures to meet the federally mandated accommodation requirements. ADA and Section 504 outline the categories of accommodations: (1) academic adjustments (e.g., extended time on tests, alternative testing location, and reduced course load) and (2) auxiliary aids and services (e.g., use of calculators, note takers, and sign language interpreters) that institutions must provide to ensure that qualified students with learning disabilities can have equal access to higher education opportunities (U.S.

Government Accountability Office, 2009). However, these regulations do not address the specific accommodations institutions must provide for each student with a learning disability. Instead, accommodations are chosen on a case-by-case basis depending on the limitations of each student's disability and factors such as location of the student's classes and the academic requirements of each course (U.S. Government Accountability Office, 2009). Gartin, Rumrill, and Serebreni (1996), stated:

> students with disabilities graduating from high school move from a protective environment in which school personnel are legally responsible for identifying and providing appropriate services under the IDEA to an environment in which the students are expected to self-identify as a person with a disability and request specific accommodations under Section 504 and the Americans with Disabilities Act (ADA). (p. 33)

Unlike secondary students with disabilities, not all accommodations that are requested by a postsecondary student will be granted; instead, the accommodations provided will be ones that are believed to be reasonable and effective based on the student's needs (Graham & English, 2001).

Postsecondary officials struggle to find methods for both determining appropriate accommodations and ensuring that these accommodations are successfully and legally provided to students with learning disabilities (Yocum & Coll, 1995). Although institutions are expected to provide reasonable accommodations to students with learning disabilities and bear the financial burden, postsecondary schools "are not required to provide accommodations that would fundamentally alter the nature of a program, lower or waive essential academic requirements, or result in undue financial or administrative burdens" (U.S. Government Accountability Office, 2009, p. 4). Despite current enforcement of disability laws, several unrelenting barriers continue to detract from equal educational opportunities for students with learning disabilities. These barriers include lack of knowledge and experiences dealing with disabilities; misconceptions of

accommodations by students and faculty; negative faculty attitudes towards accommodations; and lack of effective tools and resources to provide accommodations (Burgstahler, 2003; Burgstahler, 2015). In addition, serving students with learning disabilities and providing needed accommodations is more difficult because institutions are dependent on the students to self-identify and request academic accommodations (Mott, 2003).

Student Perceptions of Accommodations

Several studies reported that students with learning disabilities perceived a variety of limitations and barriers with the use of accommodations. A number of factors exists that contribute to the problems experienced by college students with learning disabilities. Most students with learning disabilities may not know that disability services exist in colleges (Scott, 1996), how to access disability services (McCleary-Jones, 2007; Yocom & Coll, 1995), or that they are protected and have rights under the ADA (Rumrill, 1994). Additionally, college students with learning disabilities must self-identify their disability to faculty in order to have accommodation requests considered. Many of these students do not feel comfortable revealing themselves as having a disability; consequently, they frequently forego any accommodations that may be critical to their college success (Cook, Gerber, & Murphy, 2000). Identifying as having a disability and requesting assistance from the instructor, who is in a position of authority, to make special modifications is a difficult process for students with learning disabilities who frequently have low academic esteem (Chapman, 1988). Decreased contact between teachers and students, changes in student support services, and greater expectations that students will be more self-reliant to achieve on their own are among the major differences found between postsecondary education institutions and secondary education institutions (Brinkerhoff, McGuire, & Shaw, 2002).

A few studies have investigated the learning experiences of college students with learning disabilities and the areas that they find problematic once they have gained admission. One example is a highly cited qualitative study completed by Ryan (2007) in Australia. His study utilized a semi-structured interview process conducted with eight undergraduate students self-identifying as having a learning disability with a mixture of ages, genders, courses, and year levels. Ryan (2007) found that his participants with learning disabilities felt embarrassed and guilty about requesting accommodations.

Denhart (2008) performed a phenomenological study investigating barriers to higher education faced by 11 college students with learning disabilities from two colleges located in the Pacific Northwest: one an exclusive, private college with stringent admission requirements, and the other a public, community college with no admission requirements. The qualitative interview data were analyzed and interpreted through a disability theory perspective revealing that participants were reluctant to request accommodations for fear of invoking stigma. One theme supported by 10 of the 11 students was a fear that faculty would judge them as incapable of work in a course or major if they disclosed their disability. Additionally, nearly half felt that using an accommodation devalued the work they accomplished and gave them the feeling that they were cheating others.

McCleary-Jones (2008) performed a mixed-methods study examining the experiences of students with learning disabilities at community colleges. The study used two questionnaires to survey a sample of students from two rural community colleges. Of the eight questions, one question focused on the importance of accommodations and the effects of their persistence in graduation. The majority of students (90%) indicated that they had experienced inadequate accommodations for their respective disability; however, this shortfall in service would not cause

them to withdraw from class or the college, and they stated that they would still continue to pursue their education. Based on the qualitative results of this area of the study, one theme emerged that colleges need to address the unwillingness of professors to accommodate students with learning disabilities, specifically their lack of knowledge and sensitivity regarding these students. This was highlighted by one student's feelings about the lack of support from her professors: "Some professors don't understand students with disabilities" and "they sometimes expect more of the [disability] student than from the students who do not have a learning disability" (McCleary, 2008, pp. 104-105).

Faculty Attitudes and Practice

Because postsecondary students with learning disabilities must self-identify their disability to faculty in order to have accommodation requests considered, the attitudes and practices of faculty members influence the college experience of these students (Cook et al., 2000). An abundance of research has been conducted on faculty attitudes toward students with disabilities and academic accommodations (Fonosch & Schwab, 1981; McCleary-Jones, 2008; Murray, Lombardi, Wren & Keys, 2009; Vogel, Leyser, Wyland, & Brülle, 1999). In many respects, the implementation of the ADA and other legislative directives brought learning disabilities to the forefront for the faculty and staff in postsecondary institutions. Faculty had to become more knowledgeable about the requirements of Section 504 and the ADA, what constituted reasonable accommodations, how to modify classroom educational processes and procedures on a case-by-case basis, and the student responsibilities in this process (Thompson, Bethea, & Turner, 1997). Providing appropriate accommodations and appropriate course alternatives became essential elements for success in postsecondary programs for students with learning disabilities.

Since faculty are fundamental to making academic accommodations and ensuring student success, their ignorance of the law can create barriers for students with learning disabilities. This point is highlighted by a study by Thompson et al. (1997) seven years after the passage of ADA, finding that less than 18% of the 400-surveyed college faculty and administrators had familiarity with the regulations specific to Section 504, and only 50% were aware with regulations associated with ADA. Phillips et al. (2012) examined the experiences and perceptions of faculty at one university related to making accommodations for students with disabilities in online classes. Of the 83 faculty who responded to a survey regarding online accommodations, a majority (54%) of faculty were unsure whether they had the knowledge, technology, and support to handle online accommodations. Another survey of 344 full- and part-time faculty at one university found that 80.2% of faculty had not considered the needs of students with disabilities in their courses and 11.8% of faculty had "partially" taken these students' needs into account (Bissonnette, 2006).

Knowledge of the law is not the only faculty barrier to implementing appropriate accommodations. Wolanin and Steele (2004) stated that faculty resistance to implementation, academic culture, and personal attitudes could present significant barriers. Smart (2008) highlighted that students with hidden disabilities are more often suspected of malingering than those with visible disabilities. Faculty members are frequently hesitant to work with students with learning disabilities due to the lack of training and educational resources, while training in accommodations and disabilities for faculty members has been associated with positive perceptions toward students with disabilities (Murray et al., 2009). Faculty members often rely on student disability offices on campus for guidance on how to serve these students. Such offices are not readily available at small university or community colleges due to lack of funding and

resource availability (Muller, 2006). Faculty members are not trained in disability recognition, accommodation awareness, nor alternative teaching practices and behaviors (Lock & Layton, 2001; McCleary-Jones, 2008). Furthermore, Wolanin and Steele (2004) argued that traditional academic culture provides autonomy to faculty members in their curriculum development, course content, academic standards, and governance. Accommodations are often perceived to alter classroom practice, interfere with the traditional academic environment, and are imposed by offices of disability support services which are frequently viewed as interfering and intruding (Wolanin & Steele, 2004).

> Faculty attitudes and the academic culture are the major barriers to the successful implementation of accommodations for students with disabilities. Faculty are often ignorant about their responsibilities and about how to relate to students with disabilities. Faculty resent being told what to do by low-level administrators in the disability services offices and not being able to review or question the legitimacy of a student's disability or the accommodation that is prescribed (Wolanin & Steele, 2004, p. ix).

These faculty believe that providing accommodations for students with learning disabilities compromises their academic freedom. These traditional faculty attitudes may lead to exclusion and reinforcement of the idea that students with learning disabilities do not have a future in higher education.

Many instructors are willing to accommodate the needs of students (Dallas, Sprong, & Upton, 2014), but there are inconsistencies in awareness of approaches, legal rights, and responsibilities of students and instructors (Murray et al., 2009). These issues are particularly important when considering the relationship between instructors and students, in which students may be apprehensive about disclosing their disability to instructors for fear of negative consequences. Possible solutions could include disability awareness training for instructors, training for students and instructors on their respective rights and responsibilities, and guidelines for instructional best practices (Murray et al., 2009). To better serve students with learning

disabilities, postsecondary faculty and staff members need training in four areas: (1) creating

receptive learning environments, (2) becoming aware of language, (3) applying the ADA to

college settings, and (4) promoting the success of students with learning disabilities (McCleary-

Jones, 2008). Training in accommodations and disabilities for faculty has been associated with

positive perceptions toward students with hidden disabilities (Murray et al., 2009). Prentice

(2002) also reported on factors that can negatively impact teacher perceptions about disabilities,

such as a negative attitudinal environment, lack of exposure to students with disabilities, and the

great impact that learning disability staff have on student perceptions, attitudes, and success.

A faculty member's views toward students with learning disabilities can impact how

effectively student accommodations are ultimately administered within a classroom. The

following studies investigated faculty attitudes (Murray, Wren, & Keys, 2008; Skinner, 2007;

Sweener, Kundert, May, & Quinn, 2002; Vogel et al., 1999). Vogel et al. (1999) explored 420

faculty members' attitudes and practices toward providing teaching and examination

accommodations for students with learning disabilities in a large mid-western, public, doctoral-

granting university. The part-time and full-time faculty were asked to respond to a survey

regarding their background knowledge about learning disabilities and the relevant legislation,

their firsthand experience teaching students with learning disabilities, their willingness to provide

accommodations, and their perception of the fairness of providing accommodations in regards to

students without disabilities. The participating faculty indicated slightly greater willingness to

provide teaching accommodations as compared to examination accommodations; however, the

highest level of willingness was reported for allowing students to tape-record lectures. Faculty

members were least willing to provide supplementary materials such as notes or outlines of their

lectures or to provide alternatively formatted assignments. Faculty members were most willing to

allow extended time for exams and to allow exams to be proctored in the office of support

services for students with disabilities. Faculty were least willing to alter the format of

examinations. Even after a decade, other studies indicate similar results from faculty attitudes

toward accommodations.

In a study by Skinner (2007) to determine the willingness of college faculty to provide

instructional and testing accommodations to documented students with learning disabilities,

surveys were mailed to all 483 faculty teaching at a mid-sized, liberal arts institution located in

the southeastern portion of the United States. Two-hundred-and-fifty-three faculty members

returned the survey producing a response rate of 52%. Faculty reported having a mean of 10

students with learning disabilities who required at least one accommodation in their classes

during the past five years. Only 15 of the 253 respondents either did not respond to this question

or indicated that they had no students requiring accommodations over the past five years. During

initial evaluation, one might view the study results as being generally consistent with previous

research. Faculty members seem to be either neutral or generally supportive of most

accommodations and course alternatives; however, the frequency of neutral responses for

accommodations and the indifferent faculty attitudes toward course alternatives raised flags of

concern. Instructors who provide accommodations in a neutral or unwilling manner decrease the

prospect that students will assert themselves by requesting appropriate accommodations.

Skinner's (2007) study showed that faculty willingness to provide academic adjustments

varied greatly when the type of accommodations was deemed to affect programmatic outcomes.

This finding was supported by a study performed by Sweener et al. (2002) to determine the

comfort of community college instructors with providing accommodations to students with

learning disabilities. Sweener et al. (2002) reviewed the outcomes from previous studies to

further analyze the wide variability in the types of accommodations with which faculty members are comfortable. This study had 255 full-time and 247 part-time community college instructors as participants; however, only 225 (45%) responded to the mailed questionnaire. Contrasting to earlier studies, results found that faculty reported a neutral level of comfort providing accommodations. In short, most faculty members were comfortable providing accommodations that essentially allowed students either more time or auxiliary aids. However, responses indicated significantly lower acceptance levels towards accommodations that required extra instructor time and effort or were more intrusive programmatically. Examples of accommodations with lower acceptance rates included: (a) course substitutions; (b) withdrawal from course after official date; (c) increased frequency of examinations; (d) extra credit assignments; and (e) no deductions for writing mechanics, as these were perceived to provide unfair advantages for students with learning disabilities.

A similar study by Murray et al. (2008) found comparable results. Specifically, faculty members generally had positive attitudes towards minor accommodations, but felt major accommodations threatened the integrity of their courses. This investigation examined faculty attitudes, beliefs, and practices with regard to students with learning disabilities. A survey instrument was designed to measure attitudes, and it was administered to all faculty in a large urban, private university. Responses from 192 faculty members were analyzed, and the results indicated that the instrument contained 12 reliable factors. Descriptive analyses indicated that faculty generally had positive perceptions about students with learning disabilities and were willing to spend extra time supporting these students. Consistent with prior research, faculty expressed greater willingness to provide minor, rather than major, accommodations. Additionally, faculty agreed that they did not have sufficient training to make appropriate

teaching and exam accommodations, and that additional support and information in these areas would better equip them. This is also seen in the findings that suggest that higher level faculty were more likely to provide major accommodations, suggestive of knowledge and experience in the area of pedagogy strategies and techniques for students with learning disabilities.

A recent study by Sniatecki, Perry, and Snell (2015) examined faculty attitudes and knowledge regarding students with disabilities via an online, anonymous survey. The study included 123 participants in which surveys were distributed via a faculty listserv to all full-time and part-time faculty at a mid-sized, public liberal arts university in upstate New York. One-way ANOVA was used to analyze faculty responses to survey items pertaining to their attitudes. Results suggest that although faculty have generally positive attitudes toward students with disabilities, they are more likely to hold negative attitudes toward students with mental health disabilities and learning disabilities than toward students with physical disabilities. Faculty were also asked about their attitudes toward the provision of accommodations for students with disabilities. Results from this area suggest that some faculty hold negative attitudes toward providing accommodations, with nearly 5% of respondents reporting that they agreed or strongly agreed with the ideas that accommodations compromises academic integrity and gives an unfair advantage over other students. Though this is a relatively small proportion of respondents, it is important to recognize that these beliefs still exist among faculty.

Student-faculty Relationships

Although many factors impact the experiences and successes of students with learning disabilities, research has shown that the faculty-student relationship is critical. Greater communication between students and faculty enhances the goal of positive engagement (Graham & English, 2001). Barazandeh (2005) reported that out of 320 students with disabilities, nearly

80% of these students "strongly" identified the need for better communication between faculty and students, and that increased communication would help maximize each student's educational potential. Hartman-Hall and Haaga's (2002) study of 86 postsecondary students with learning disabilities demonstrated that the type, frequency, and quality of the instructor's response to assistance likely affects the students' willingness to seek future help. Students with learning disabilities tend to quickly categorize professors into either communicatively competent or incompetent instructors (Connor, 2013). This was supported by the phenomenological investigation by Cornett-DeVito and Worley (2005) of 21 postsecondary students with learning disabilities. Their findings suggested these students not only want responsive, engaging, flexible, and competent teachers, they need them in order to succeed.

A major factor affecting proper faculty engagement may be the student's lack of self-advocacy and communication skills, such as the ability to express thoughts and feelings honestly and directly. Such skills are vital to requesting accommodations at the postsecondary level, because, unlike the process in secondary schools, it is the responsibility of the postsecondary student with learning disabilities to disclose the disability and arrange for accommodations, not the faculty or staff (Graham & English, 2001). Additionally, students with learning disabilities do not often address their disabilities with faculty, and faculty are not allowed to broach the topic with these students due to laws protecting them. Many students have limited knowledge of their own disabilities and may be timid, embarrassed, or unfamiliar about the accommodations available to them from the postsecondary school (Lock & Layton, 2001). Fortunately, many students, as seen in the Barazandeh (2005) study, believe that faculty are supportive of students with learning disabilities and are willing to help them maximize their potential for success but may need better support services to do so (Barazandeh, 2005).

The findings in this section suggest that there are major barriers that prevent or at least interfere with the academic success of students with learning disabilities in online education. The previous studies spotlight that at least a small proportion of faculty continue to demonstrate negative attitudes towards students with disabilities and the provision of accommodations. Many faculty members still do not fully understand how to implement accommodations into online courses due to technology and asynchronous teaching methods. In order to understand the lived experiences of college students with learning disabilities, one must also comprehend how online faculty engage with these students, establish or minimize learning barriers, and affect the daily educational experiences of these students. College students with learning disabilities need the opportunity to gather of their own accord, share experiences, and find a collective voice to ensure social justice towards online education. Understanding faculty and student perceptions of accommodations allows the research question and sub-questions to be fully evaluated by the researcher, and the lived experiences of the participants with learning disabilities to be more fully explored and documented.

Online Education

In order to understand the lived experience of college students with learning disabilities taking online courses, one must understand the multiple perspectives of online educational technology. These perspectives assist in creating a picture of how online education impacts the educational aspects of students with learning disabilities.

A review of the key literature in the area of online education must first begin with an appropriate definition. Keegan (1995) provided a broad yet useful definition stating that online education and training result from the technological separation of teacher and learner which frees the student from the necessity of traveling to "a fixed place, at a fixed time, to meet a fixed

person, in order to be trained" (p. 7). The popularity and demand for online education courses by postsecondary students has continued to intensify. The 2012 Survey of Online Learning revealed that the number of students taking at least one online course has now surpassed 6.7 million (Allen & Seaman, 2013). In fall 2011, 32% of all enrollments were in online courses, while more than 80% of all postsecondary students are predicted to take some online course by 2014 compared to 44% reported in 2009 (Adkins, 2011; Allen & Seaman, 2013).

Simply stated, online programs have been seen as a means to reduce barriers to non-traditional students. There are numerous barriers and stressors that are encountered by non-traditional students as they encounter multiple life demands. The parental role, childcare, and the barrier of traveling are all listed as primary stressors for non-traditional and parental students (Cragg, Andrusyszyn, & Fraser, 2005). The flexibility, convenience, and reduction of travel that online education programs provide is a way to decrease these barriers. The ability of reducing barriers via online education is an important consideration for non-traditional, non-residential, and parental students. These types of programs certainly work to eliminate schedule, childcare, and travel issues. However, two important considerations commonly not considered are the cost of hardware, software, and internet service for non-traditional students and the prerequisite skills required of an individual before they have the ability to benefit from such coursework (Cragg et al., 2005). Online education has certainly helped alleviate some pains for non-traditional students, but it has in turn created a new set of hurdles.

As online classes are offered as alternatives to traditional instruction in higher education, there are extensive debates concerning quality, degree completion, and learning outcomes. Some educators believe that online education shows tremendous potential as an innovative and creative pedagogical method, while others find online capabilities inadequate and an unsuitable

replacement for face-to-face classroom learning. In order to completely and appropriately evaluate the perceptions of postsecondary online students with learning disabilities, the characteristics and attributes of online classes must be examined through the lenses of college students without disabilities, college faculty, and college administration. This review provides insight on how, why, when, where, and for whom online education is utilized. These perceptions from all three roles of online education are necessary to identify the possible barriers and benefits to postsecondary students with learning disabilities.

Universal Design

Universal design "allows access to a facility or element and facilitates user empowerment" (Salmen, 2011, p. 13). The concept started within the field of architecture to develop facilities that were accessible by individuals with disabilities, and it has spread to many varying areas including web design and academia. A growing body of literature has begun to clarify the practical application of Universal Design in postsecondary pedagogy. The Center for Universal Design (1997) defines Universal Design as "the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design" (p.1). The principles for Universal Design are straightforward: to provide equal access to goods, services, and environments to all people. The seven principles of Universal Design derived from architecture but still apply to education include: 1) equitable use, 2) flexibility in use, 3) simple and intuitive use, 4) perceptible information, 5) tolerance for error, 6) low physical effort, and 7) size and space for approach and use (The Center for Universal Design, 1997, p. 1).

In academia, Universal Design is an approach to course design that focuses to create an appropriate learning environment for all students, including those with disabilities (Salmen, 2011). According to Shaw (2011), several similar terms are used to refer to the idea of applying

principles of Universal Design to teaching: Universal Design for instruction, Universal Design for learning, and universal course design. Although these terms differ in emphasis, they all encompass the single idea that instructional procedures should be designed to be accessible to all students (Salmen, 2011). Universal Design characterizes a paradigm shift from accommodations to full inclusion. The use of academic accommodations are beneficial for the students who are utilizing them; however, the problem is that the accommodations only help those who are awarded them. In Universal Design, all students are able to benefit from course design and learning environment (Shaw, 2011). Meeting the educational needs of a diverse student population allows all students to participate in a standard learning environment with fewer special accommodations, saving instructors time and effort required to arrange accommodations for specific students who have learning difficulties (Shaw, 2011). Universal Design values diversity; students come from diverse backgrounds, have diverse learning styles, and have varying levels of baseline knowledge. As noted by Salmen (2011), Universal Design is meant to meet the needs of students with a wide range of linguistic, sensory, motor, cognitive, and intellectual abilities and disabilities. Universal Design allows educators to level the playing field for all students, and it acknowledges the diverse ways that the brain processes information in the process of learning, which creates opportunities for all learners to experience success (Shaw, 2011).

Effectiveness of Online Education

Multitudes of studies have explored how to maximize the effectiveness of online learning (Case & Davidson, 2011; Darrington, 2008; Fish & Wickersham, 2009; LaPointe & Reisetter, 2008; Lewis & Abdul-Hamid, 2006; McGinnis, 2010; Merrill, 2003; Miller & King, 2003; Reisetter & Boris, 2004; Zsohar & Smith, 2008). The debate concerning the effectiveness of online education is typically framed in terms of how it compares with traditional teacher-led

classroom instruction (Bell & Federman, 2013). The goal of education is learning; thus, learning

effectiveness is the first measure by which online education should be evaluated. A great deal of

evidence exists for the past 15-20 years showing no significant differences regarding the

effectiveness between online and teacher-led classroom instruction (Bell & Federman, 2013).

Swan (2003) noted that "we now have good and ample evidence that students generally learn as

much online as they do in traditional classroom environments" (p. 1). Some examples include:

(1) Barry and Runyan (1995), who found no significant difference between resident and distance

education involving military students; (2) Blakeley and Curran-Smith (1998), who determined

community health nursing students trained online were able to meet their course objectives and

perform in the field as well as students who had completed similar on-campus courses; (3) Maki,

Maki, Patterson, and Whittaker (2000), who evaluated an online introductory psychology course

and concluded that students in the online sections showed a greater increased content knowledge

through in-class examination scores; (4) Rivera and Rice (2002), who found no differences in

outcomes for students enrolled in an undergraduate introductory course in Management

Information Systems offered as an online class, a traditional face-to-face class, or web-enhanced

class; and (5) Hannay and Newvine (2006), who interviewed 217 adult, part-time students

enrolled in criminal justice courses to determine student perceptions of the quality and difficulty

of distance learning courses as compared to courses taught in the traditional classroom, and the

results showed that the majority of students reporting higher grades and higher levels of effort in

distance learning.

 Beginning around 2000, several studies, including meta-analyses, began to find

significant differences in favor of online learning. Neuhauser (2002), one of the earliest and

smaller studies during this period, investigated to see if there were significant differences in

learning outcomes between two sections of the same course taught by the same instructor for 15 weeks, one taught online and one taught using the traditional three-hour face-to-face classroom format. The results of this study identified no significant difference in student grades, including test scores, assignments, participation grades, and final grades; however, 95% of all the online students indicated a preference for online courses over face-to-face courses. The study demonstrated that equivalent learning activities can be equally effective for learning online as in traditional classrooms.

The U.S. Department of Education produced a meta-analysis review of the research from 1996 to 2008, identifying more than 1,000 empirical studies of online education (Means, Toyama, Murphy, Bakia, & Jones, 2010). From this analysis, Means et al. (2010) concluded that students who took a course online had stronger learning outcomes, on average, than students taking the same course via face-to-face. This report supported and justified many policymakers' rational for implementing online education in settings where face-to-face instruction is not feasible. Studies with similar finding were also published to determine online education effectiveness in K-12 education (Cavanaugh, 2001; Patrick, & Powell, 2009).

Schachar and Neumann (2003, 2010) reported positive results for online education in two meta-analysis studies. Both studies reviewed the literature to estimate and compare the differences between the academic performance of students enrolled in online education courses relative to those enrolled in traditional settings between 1990-2002 (Schachar & Neumann, 2003) and between 1990-2009 (Schachar & Neumann, 2010). In 2003, 86 experimental and quasi-experimental studies encompassing data for over 15,000 students were evaluated. In two thirds of the cases, students taking online course outperformed their counterparts enrolled in traditional courses (Schachar & Neumann, 2003). To further extend their meta-analysis across

time, Schachar and Neumann (2010) continued their research by not only adding seven years' worth of studies, but also including studies in English, German, French, Spanish, and Italian languages. Upon reviewing 125 qualified studies and the learning outcome data from over 20,800 participating students, Schachar and Neumann (2010) concluded that 70% of the students taking courses by online education outperformed their counterparts enrolled in traditional courses, indicating that distance education not only is comparable to traditional instruction, but can actually outperform traditional classroom pedagogy.

Sitzmann, Kraiger, Stewart, and Wisher (2006) also performed a meta-analysis comparing the effectiveness of classroom and online instruction. However, in order to study working adults, Sitzmann et al. (2006) focused exclusively on research reports where trainees were acquiring knowledge to prepare them for their current or future employment opportunities. This study identified 96 studies reporting data from 19,331 adults enrolled in 168 training courses. The overall results indicated online instruction was 6% more effective than traditional classroom instruction for teaching declarative knowledge (facts and principles), but the two delivery media were equally effective for teaching procedural knowledge (processes and procedures). When online media was used as a supplement, defined as blended or hybrid course, this method was 13% more effective than the classroom instructional method for teaching declarative knowledge and 20% more effective for teaching procedural knowledge.

The most notable identifier of student success is degree attainment. In a national study of community college students, Shea and Bidjerano (2014) collected data from 16,100 first time beginning students who were pursuing a degree with and without online education courses within their first year of college. Their hypothesis was that the degree completion rate would be lower for students enrolled in online courses; however, their data revealed that students who had

taken some of their courses online appeared to be attaining associates degree at higher rates that those who had not utilized online courses. Shea and Bidjerano (2014) stated, "If the goal of online education, as many have asserted, is to increase access and opportunity to attend and complete college, this data suggests that there is significant progress toward achievement of this goal" (p. 110).

Tanner, Noser, and Totaro (2009) conducted a comparative study to generalize students' and faculty members' perceptions of online courses and degree programs. The study confirmed that faculty perceptions of online education were different from students' perceptions. Two of the major differences included self-discipline and the value of technology. When presented with the premise that online classes require students to be more self-disciplined, the student participants showed a significantly higher level of agreement than did faculty participants. Additionally, while the student respondents perceived that the technology required to take online classes increases the value of the educational experience, faculty respondents disagreed. Faculty value the content of the material disseminated, not the method. In addition, the study recommended that administrators who are planning on offering online courses should take students' perception into consideration; they should address the concerns and anxieties of both students and faculty before making decisions (Tanner et al., 2009).

Perceptions of College Students

Previous research has found both positive and negative perceptions among students regarding online learning. Reisetter and Boris (2004) of the University of South Dakota administered a survey to the online students in the School of Technology to identify their perceptions of the necessary elements for success in an online education course. According to their results, students "consistently emphasize the role of the instructor feedback in their online

learning" (p. 280). LaPointe and Reisetter (2008) confirmed their results with their survey of 412 graduate students enrolled in online courses through a state university system offered during the spring semester of 2004. Quantitative analyses indicated that students experienced significantly more satisfying connections with their online instructors than they did with their online classmates, and that they valued their instructor interactions more highly. Those who did not value online learning also described inadequate and unsatisfying experiences in their connections with the instructor. Additionally, Muilenburg and Berge (2005) conducted an exploratory factor analysis study surveying over 1,000 undergraduate students to determine student barriers to online learning, finding that the single most important barrier to students learning online was a lack of social interaction. Likewise, McGinnis (2010) determined that the "more interaction the student had with the instructor, the better the outcome as long as the interaction with the instructor did not outweigh the student's collaboration with other students" (p. 263).

Feedback to students that is prompt, relevant, and continuous contributes to high student satisfaction levels in online courses (Darrington, 2008; Zsohar & Smith, 2008). Additionally, Dukes, Waring, and Koorland (2006) found that students expect immediate response to their communication, and instructors should attempt to respond within a 24-hour period to student inquiries. Dukes et al. (2006) also found it important for the instructor to obtain feedback from the students, stating "summative feedback, in our experience, is not sufficient" and "continuous feedback for formative purposes is especially necessary" (p. 155). Similarly, Gallien and Oomen-Early (2008) conducted a study that concluded that students who received consistent personalized instructor feedback exhibited higher satisfaction levels and academic scores compared to those who received strictly collective feedback.

Miller and King (2003) reviewed previous literature of online education studies to focus beyond comparisons with traditional education to develop the best practices for online education and effective teaching and learning. One of the major areas of study included student perceptions of online education, and they found that frustration with the technology of an online course was another factor behind students failing to complete an online course. Parker and Banerjee (2007) also indicated that students with disabilities had much lower comfort with using technology. Beyond the necessity for students to complete an orientation prior to enrolling in an online course (Mitchell, 2010), Merrill (2003) addressed this student frustration in his article *Best Practices for Online Facilitation*. He declared that an effective online course must utilize "interactive instructional strategies and learning events that flow from and support course learning objectives" (p. 14). Simply stated, in order to help overcome a student's frustration with the technology in the course, the instructor must create a course in which the student can easily follow a well laid out path that is centered on the learning objectives.

As depicted by the previous studies in this section, dozens of quantitative studies have explored the perceptions of students and their levels of satisfaction with the online learning environment (e.g., Al-Asfour, 2012; Coldwell & Wells, 2003; Marinakou, 2013; Paechter & Maier, 2010; Sampson, Leonard, Ballenger, & Coleman, 2010; Young & Norgard, 2006). Additionally, some studies compared online to face-to-face courses to determine student perceptions of online education. For example, Elvers, Polzella, and Graetz (2003) found no significant differences in student attitudes toward the effectiveness of online and face-to-face versions of a psychology class, and Driscoll, Jicha, Hunt, Tichavsky, and Thompson (2012) found no significant difference in reports of student satisfaction with online and face-to-face versions of a sociology class.

To gain a comprehensive understanding of students' engagement with online education, a limited number of qualitative studies explored the initial experiences and perceptions of online students. A few studies have explored learners' perspectives of online learning, particularly in terms of perceived strengths and weaknesses. Mortagy and Boghikian-Whitby (2010) launched an experimental longitudinal study to compare students' perceptions over time of an online learning environment. Their results surmised that students' perceptions changed over time concerning their satisfaction with course activities, and that online students were more satisfied with the course activities than face-to-face students. Online students perceived that faculty have higher expectations; faculty members were more available; faculty interacted and communicated with students in a timely manner; and course activities included critical thinking skills. Furthermore, students believed that faculty had high expectations and were available to communicate in a variety of methods throughout the course.

Strengths of Online Education

Reasons for using online instruction include improved pedagogy, easy access to knowledge, more interaction, personal presence, cost effectiveness, and ease of managing and revising instructional materials (Lim, Morris, & Kupritz, 2014). One example includes a qualitative study where Petrides (2002) interviewed students to obtain their perspectives on online learning. The context of the research study was a one-semester online college class. When interviewed, some participants indicated that they tended to think more deeply about the subject areas when responding in writing as compared to giving verbal responses. They explained that they were able to continually reflect upon each other's thoughts because of the public display of the discussion postings on the class website. As stated by one participant: ''There is something that forces you to think more deeply about subject areas when you have to respond in writing''

(Petrides, 2002, p. 72). In a similar study, Vonderwell (2003) interviewed 22 students in regards to their perceptions of their online learning experiences. Some participants expressed that the online environment allowed them to write carefully about their ideas. For example, one participant stated: "the discussion questions were not just for writing the answers; they required reflection" (p. 86).

These positive student comments regarding online learning most often focus on the convenience and flexibility of online courses in terms of scheduling. One such example is the study by Hannay and Newvine (2006) that found that most students opted for online course due to the time commitments, such as work and family, that made it difficult for them to come to campus for class. Additionally, business students surveyed by O'Malley and McCraw (1999) reported that online courses saved time and were more convenient for their schedules. Grimes (2002) interviewed 13 students enrolled in a dental terminology course and concluded that their perceptions were generally positive. Students reported having learned more than expected in the course and appreciated the convenience of working at their own pace and at times that fit their family and work schedules. Similarly, 81% of business students taking an online marketing course agreed that the flexibility of online technology aided their learning of the course content, and nearly two thirds of the students enrolled in an online marketing course reported that they would take another online course (Stewart, Waight, Norwood, & Ezell, 2004).

Flexibility is another reported strength of online learning. Petrides (2002) stated that participants reported it was easier to work in collaborative groups in an online course without rearranging everyone's schedule as one might do in a traditional face-to-face course. In Poole's (2000) study of student participation in a discussion-oriented online course, the results indicated that students contributed in online discussions at times most convenient to them, such as on

Saturdays and Sundays. Poole (2000) also found that students mostly accessed course materials from the place most convenient to them, their home computers. Murphy and Collins (1997) found similar results in their study of communication conventions in instructional chatroom sessions. Participants indicated they read and responded to comments in online discussions at times convenient to them such as early mornings, late evenings, and weekends.

Identifying helpful components and perceived challenges based on their online learning experiences, Song, et al. (2004) gained insight into learners' perceptions of online learning by surveying 76 graduate students at a large southern university. All participants had successfully completed at least one online course. Results of the study indicated that a majority of students agreed that course design, motivation, time management, and comfortableness with online technologies impacted the success of their online learning experiences. Overall, their experiences with technologies highlighted the participants' positive perspectives of how useful the technologies had influenced their positive perspective on online education. The majority of students prefer consistent design across courses to support ease of navigation as supported by Yang and Cornelius (2004). Their qualitative research study utilized student interviews, observations, and archival data to evaluate the positive and negative experiences of three online students. Results indicated that flexibility of class participation time, self-paced study, cost effectiveness of online class, electronic research availability, well-designed course layout, ease withconnection of the Internet, easy navigation of the online class interface, and familiarity with the instructor contributed to participants' positive experiences.

Dobbs, Waid, and del Carmen (2009) studied students' perceptions of online courses. The study, which included 180 students taking online classes and 100 students taking face-to-face classes, reported that students perceived that traditional face-to-face courses were easier

than online courses. In addition, students who had never taken any online courses had totally different perceptions about online education compared to students who had taken online courses. Students who had no online education experience perceived that faculty have low expectations, whereas students who had previous online courses experience believed that faculty have high expectations. Meanwhile another study (Wyatt, 2003) revealed that students, who took online classes because they were convenient, found the courses were more demanding, sometimes overwhelming. Additionally, students believed that faculty had very high expectations compared to face-to-face courses which resulted in higher dropout rates in the online courses. Furthermore, the study found a high correlation between student age and the perception that online instruction provided a high quality experience—the older the student, the higher the perception.

Weaknesses of Online Education

Researchers have identified several weaknesses related to online learning. Most weaknesses were highlighted by Song et al. (2004) where surveyed students indicated that technical problems, a perceived lack of sense of community, time constraints, and the difficulty in understanding the objectives of the online courses as challenges. Daniels and Feather (2002) found similar results when surveying the perceptions of 51 college students in two online courses. These findings underlined that students with no online experience perceived that the online courses did not involve enough interaction with classmates, there was an increased workload, and there was less in-depth coverage of materials.

Similarly, Smart and Cappel (2006) found that the largest dissatisfaction reported among the participants was the time required to complete the online modules. In a study by Lim et al. (2014), students in online courses reported more workload than those in blended courses while also claiming less learning support. Other studies have shown that students feel that online

courses are more demanding and require more discipline (Mortagy & Boghikian-Whitby, 2010). These findings draw some implications for the importance of the learners' psychological state in an online learning environment, especially since learners may feel unsupported and experience an increased workload if they lack the sense of presence or belonging (Lim et al., 2014). Lim et al. (2014) highlighted that students reported a lack of instructional clarity in online courses that had previously been noted by earlier studies (e.g., Lim, 2002; Lim & Morris, 2004).

Other student-perceived weaknesses related to online learning were described in the research literature. One consistently reported weakness was delayed responses by the instructor and other students. In Petrides' (2002) study, some participants reported they felt an insufficient response time in the online course discussions in comparison to what could typically occur in a structured face-to-face class discussion. This appears to be especially obvious in asynchronous online discussions when students have to wait for others to read and respond back to their bulletin board postings or e-mail messages. These students noted that distance learning should not replace the classroom experience. Participants in Hara and Kling's (2000) qualitative case study of an online course at a major U.S. university also reported students' frustration due to response lag from the instructor. Recent studies indicate similar results. Students in Vonderwell's (2003) study reported that a disadvantage of online courses was the delay of immediate feedback from the instructor. One participant in the study stated that when he emailed a question to the instructor, ''it might take hours, maybe a day or so before you get an answer back for the question'' (Vonderwell, 2003, p. 84). Edmundson (2012) stated that an online course "tends to be a monologue and not a real dialogue. The Internet teacher, even one who responds to students via e-mail, can never have the immediacy of contact that the teacher on the scene can" (p. 2).

Learners also report the lack of a sense of belonging or community during online learning that prevents the development of shared feelings and emotions between learners and instructors, as well as feelings of isolation (McInnerney & Roberts, 2004). Facilitating a sense of belonging for students can be important to promote retention (Perrucci et al., 2008). Perrucci et al. (2008) noted that this may be critical for students with disabilities who may experience feelings of disconnectedness. Motteram and Forrester (2005) completed a qualitative study assessing student experiences in an online course. The study evaluated 27 first-time M.Ed. online students and 20 M.Ed. students taking in-class courses for comparison. Research concluded that feeling isolated was a major cause of students' stress when taking online courses, especially when that stress derives from frustration with technical glitches, apprehension caused by anticipating feedback from the instructor, and confusion or uncertainty about the instructional guidance.

Likewise, O'Malley and McCraw (1999) found that students perceived that it was difficult to contribute to class discussion in online courses. Supporting these findings, Löfström and Nevgi (2007) conducted a similar study reporting problems with technology and feelings of isolation as the greatest obstacles to online learning. Researchers have found that these variables are some of the most important factors influencing learner satisfaction and learning engagement (Burgstahler, 2009). Fontaine (2002) argues that delivering vivid learning experiences to online learners requires creating a sense of presence, a feeling of immediacy, and a broad awareness of the real and vivid learning environment. Song et al. (2004) surveyed 76 graduate students to identify perceived challenges based on their online learning experiences. These students noted the lack of community and felt isolated during their learning experiences. Vonderwell (2003) reported that online learning participants indicated a lack of connection with the instructor, especially a "one-on-one" relationship with the instructor. As stated by one participant in the

study, "I still feel like I know a little bit about my instructor, but not the same way that I would if I was in a class. I don't know much about her personality at all" (p. 83). Other studies found similar results. For example, Stodel, Thompson, and MacDonald (2006), Symeonides and Childs (2015), and Frimming and Bordelon (2016) reported that online learners reported feeling isolated from faculty as well as other learners in the online courses.

Much like the barriers for students to receive accommodations, barriers preventing accessibility to technologies affects students from effective online learning opportunities. Barriers to the accessibility of technologies are caused largely by three categories of issues: technical, design, and intrapersonal barriers (Wimberly et al., 2004). Technical barriers occur because of the student's lack of technological knowledge or lack of access to sufficient technology (Myhill, et al., 2007). While design barriers in online resources put everyone at a disadvantage, "technology that is not universally designed, without consideration for the full spectrum of human (dis)abilities is likely to contain access barriers" (Schmetzke, 2001, p. 2). Intrapersonal barriers occur when the learning environment does not meet the individual learner's needs (Myhill, et al., 2007).

Online instructors often make their courses inaccessible without realizing it, as few instructors are properly trained to be aware of barriers for students with disabilities or barriers to accessibility in online courses (Tandy & Meachum, 2009). However, it is the instructors' responsibility to make sure all students have access to course materials and resources (Hollins & Foley, 2013). Although faculty members are recognized as experts in their course materials, they need assistance and training in the development and delivery of online courses. Online instructors and institutions tend to employ an accommodations-only philosophy rather than

proactively dealing with accessibility (Barnard-Brak & Sulak, 2010; Burgstahler, 2015; Kim-Rupnow et al., 2001; Kinash et al., 2004; Seale, 2013).

As quoted by Mortagy and Boghikian-Whitby (2010), "The success of an online course depends on effective course design using a student-centered model, delivery, and assessment" (p. 19). Fichten et al. (2009) suggested that schools should consider developing and adopting online accessibility guidelines for use in development of online education. Lazar et al. (2004) discovered that most webmasters that responded to their survey (155 out of 175 respondents) supported the concept of web accessibility, but cited barriers to implementing accessibility such as lack of time, lack of training, lack of managerial support, lack of client support, inadequate software tools, and confusing accessibility guidelines. Additionally, this research uncovered that 11% of the webmasters scoffed at accessibility, considering it "unnecessary, inappropriate, and an intrusion into their graphical design sensibilities" (Lazar et al., 2004, p. 282), and would only make websites accessible if federal mandates forced them to comply. Furthermore, the potential of technology to enhance the learning experience may be offset by a number of factors, such as problems of design of online education by untrained or inexperienced teachers (Fichten et al., 2009).

Perceptions of College Faculty

While online instruction is growing rapidly at most institutions, faculty members have been skeptical of the use and success of online education. Much like faculty's resistance with accommodations noted by Wolanin and Steele (2004), online education has been slow to be accepted as a well-defined teaching methodology. Online instruction is foreign to many faculty, and the implementation of this teaching methodology can raise questions of why they pursued an academic career in the first place. Not surprisingly, many faculty view online instruction

62

tentatively because it differs from how they were taught, and they fear it will distance them from their students (Bacow et al., 2012; Johnsrud, Harada, & Tabata, 2006). Instructional support and knowledge about online education were found to be available (Burgstahler 2006; Roberts & Crittenden, 2009; Seale, 2006), but lack of motivation to teach these courses centered around concerns of academic recognition such as tenure, rank, and pay (Johnsrud et al., 2006). With the growing data on learning outcomes, faculty members are often fearful that a student can learn as much from participating in online courses as they can by being physically present with the faculty member in a classroom (Bacow et al., 2012).

Necessary measures to develop and teach quality online courses are considerably different compared to implementing conventional courses (Dunlap, Sobel, & Sands, 2007). Questions regarding the quality of online education tend to stem from the instructor's ability and resources available to facilitate learning within a collaborative environment and produce the same level of cognitive development and knowledge (Wickersham & McElhaney, 2010). Facilitating online courses brings with it concerns of training, time, technology experience, technical infrastructure, increased workload, proper support, student preparedness, and student retention (Bacow et al., 2012; Hae-Deok, Wei-Tsong, & Chao-Yueh, 2011; Maguire, 2009; Wickersham & McElhaney, 2010). Faculty viewed teaching online as more difficult than teaching in the traditional classroom setting (Grosse, 2004) and regarded online courses as more labor intensive because of the amount of time required to prepare, grade papers, and respond to discussion to maintain engagement (Lao & Gonzales, 2005; Wickersham & McElhaney, 2010).

Supporting faculty becomes significant because of the number of faculty who begin their online experiences with little to no knowledge of processes of designing, developing, and instructing an online course (Cuellar, 2002; Fichten, Asuncion, & Scapin, 2014). After analyzing

data from 386 online instructors from 36 colleges, Shea (2007) determined that faculty acceptance of online pedagogy is a critical component for future growth and quality assurance of online education. Furthering this idea, Keengwe and Kidd (2010) stated that "faculty who develop and teach online courses must remember that it is pedagogy not technology that is critical to the success of online courses" (p. 537). Lewis and Abdul-Hamid (2006) conducted a study of 30 instructors of online courses to determine "how faculty members teaching online are using effective teaching practices in their online courses" (p. 83). They noted several key components of these instructors' online courses to include their ability to foster interaction, provide feedback, outline grading expectations, identify early those students who did not actively participate, and include real life applications in the course material (Lewis & Abdul-Hamid, 2006). Similarly, Miller and King (2003) identified five main areas to blame for course non-completion: the "lack of feedback; feelings of isolation; frustrations with the technology; anxiety; and confusion" (p. 286).

In contrast to other studies, Löfström and Nevgi (2007) utilized questionnaire data obtained from university instructors and students and determined that instructors were more likely than students to perceive the learning experience in online courses to be more meaningful. They reported more student collaboration, reflection, and ability to apply knowledge gained in online education. The greatest difference between teachers and students concerned the contextual nature of learning in an online environment. Similarly, Baglione and Nastanski (2007) examined if faculty members prefer the online environment by surveying 122 experienced faculty members and analyzing the results using ANOVA. Their results found that faculty members with experience teaching in online and in-class formats perceived that the online environment led to a more substantive discussion, as well as more distributive and equitable dialogue opportunities.

Furthering this theme, Bekele and Menchaca (2008) noted that just over half of the 26 studies from 1995 to 2007 considered in their qualitative comparative analysis reported that Internet-supported learning outcomes were better than the in-class outcomes.

The growth of online education has also brought to the forefront its own challenges of academic integrity. Many instructors acknowledge that academic dishonesty in online courses is much easier because of the Internet material (Sileo & Sileo, 2008). In recent years, a number of studies have tried to determine the extent of cheating in online education. One such study was conducted with a group of 48 students enrolled in an online business communication course in the fall semester of 2010 (Jones, 2011). Of the students surveyed, 92% indicated that they had or they knew of someone who had cheated. When asked specifically if they would cheat, 59% indicated they would intentionally cheat. Additionally, 50% of the students indicated that they had or knew of someone who had engaged in Internet plagiarism. Jones' (2011) study also identified the top three responses for cheating: grades (92%), procrastination (83%), and time (75%).

Another study compared self-reported cheaters in online courses to the self-reported cheaters in traditional courses at a large, state-funded university (Lanier, 2006). In this research, 1,262 students from a non-random convenience sample were surveyed using an instrument consisting of 22 items measuring self-reported cheating. This study reported that 41.1% of the online students admitted cheating, while only 22.3% of the traditional students acknowledged cheating. In order to validate these finding, the study asked the respondents: "have you ever assisted anyone with an online/lecture exam?" Consistent results showed that 36.3% of online responded positively compared to 13.7% of traditional students admitting such help.

Not everyone agrees that the potential for online cheating is a concern. Baron and Crooks (2005) suggested that the idea of prolific cheating in online courses stems from conventional perceptions rather than empirical data. One smaller study revealed that a much lower percentage of students cheated than had been documented in other studies. Mastin, Peszka, and Lilly (2009) implemented an online quasi-experiment to evaluate 439 undergraduate students from a regional Southwestern state university. This study found that across all conditions, 14.1% of students inflated their self-reported scores (cheated). Additionally, students were found to more likely to cheat late in the semester (20.2%) versus early in the semester (9.6%), exposing the variability of frequency and timing of online academic dishonesty.

Despite the enormous growth in online education in recent years, concerns exist about whether cheating is viewed differently by online students compared to those in a traditional classroom setting. Additionally, many believe perceptions have changed as to what constitutes cheating, so some behaviors that are seen as dishonest and unethical by some may be seen as less serious by others. One key study by King, Guyette, and Piotrowski (2009) focused on student attitudes and perceptions towards academic integrity in online education. It was specifically designed to gauge the attitudes of business students toward various issues and behaviors when taking an online examination. Their study involved 121 undergraduate accounting students responding to an 11-item questionnaire whose construction was based upon prior research and online teaching experiences. The results showed that 73.6% of the respondents believed that more cheating occurs in online courses because it is easier to cheat in this type of course.

Despite the challenges of online education, the number of online learners is still increasing. This is probably because certificates and credentials from online programs provide students with opportunities to increase their economic status. This increase in online enrollment

is also cultivated by society's economic growth, the need for skills training rather than just knowledge, people's desire to strive for professional growth through higher education, and the appeal of online courses for nontraditional students (Allen & Seaman, 2007).

In this section online education was highlighted to be as effective if not more than traditional courses, so it is important that this format is equally available to students with learning disabilities. In order to fully consider the lived experiences of online college students with learning disabilities, the qualities and characteristics of online classes must be examined through the lenses of college students without disabilities, college faculty, and college administration. This review provided insight on the effectiveness, strengths, weaknesses and perceptions of online education. These perceptions from all stakeholders of online education are necessary to identify the possible barriers and benefits of online education to postsecondary students with learning disabilities.

College Students with Disabilities and Online Education

Most studies about online education do not explicitly explore the experiences of students with learning disabilities. The majority of available research describes what can and must be done to facilitate accessibility in online education (e.g., Crow, 2006; Friedman & Bryen, 2007; Richards & Hanson, 2004), but only a smaller percentage detail the efforts to improve online accessibility for students with learning disabilities and the impact it has on their academic success (e.g., Erickson, Terise, Van Looy, Lee, & Bruyere, 2009; Moisey, 2004; Veal, Bray, & Flowers, 2005). A review of the literature on the strengths, perceptions, results, and accessibility of online education indicates it may be as effective if not more so than traditional courses, so it is important that this online format is available and accessible to students with disabilities.

As the number of online courses continues to increase (Allen & Seaman, 2013), it is apparent that many online instructors lack the design skills, technical expertise, or time to do more than implement the most fundamental design strategies, which are not effective for all students (Simoncelli & Hinson, 2008). A minority of faculty report being aware of strategies to make their online courses accessible (Gladhart, 2010), while many others say that they do not have the knowledge and necessary support to ensure proper access to students with disabilities (Roberts, Crittenden, & Crittenden, 2011). In addition, more than 80% of faculty teaching online courses in one survey had not considered and less than 12% had only partially considered the needs of students with disabilities in developing their courses (Bissonnette, 2006).

Students with Disabilities and Online Education

Despite research indicating the potential positive outcomes connected with online education opportunities for students with disabilities (Catalano, 2014; Barnard-Brak & Sulak, 2010; Standen, Brown, & Crosby, 2001), the intersection of online education and students with disabilities, especially learning disabilities, has received limited attention from researchers. Kinash et al. (2004) evaluated the literature published between 2000 and 2003 concerning the relationship between online learning and disabilities. A consistent message in this literature was that making courses accessible to students with disabilities not only assures their civil right to access, but also promotes best practices in online learning for all students.

Design of online courses has been a common theme within online education literature. Catalano (2014) conducted a mixed methods study in which seven students with diverse disabilities participated in a one-credit online library research course. The course had been adapted to be accessible using the best practices literature on online instruction for students with disabilities. After enrolling the students in the online course, the students carried out specific

tasks and then completed a follow-up questionnaire about their experiences. The researchers were able to closely link the student needs with "good" instructional design.

Comparably, Habib et al. (2012) carried out a qualitative study reviewing the experiences of 12 college students with dyslexia using online learning resources. The students were interviewed on two separate occasions, once before and once after completing a set of tasks designed to mimic typical activities within an online course. The participants identified a number of issues ranging from inconsistent use of the online structure on the part of faculty members, inconsistent design, inadequate preparation on the part of students, as well as a host of other noted challenges. The researchers suggested a need for improvements in the actual physical design, and in the pedagogical and didactical design of online courses. Similar to Catalano (2014), it is evident that these solutions can be linked to the need for "good" instructional design.

Another weakness identified in online courses is that accommodating students with accessibility needs is frequently not considered when designing online courses (Kinash et al., 2004). A 2010 survey of 183 two- and four-year colleges and universities found that 17% of institutions had no formal policies ensuring online course compliance with the regulations of the ADA, and 58% reported that either the individual faculty members, academic programs, or departments were the responsible parties for ensuring online ADA compliance (Green, 2010).

A previously discussed study, Phillips et al. (2012) investigated faculty experiences providing disability accommodations in online courses. Reviewing the finding in the 2012 study highlighting that few online faculty received accommodation requests from students with disabilities, Terras, Leggio, and Phillips (2015) wanted to better understand the experiences of students with disabilities in online courses. Terras et al. (2015) conducted a qualitative study interviewing 11 graduate students with varying disabilities to gain an understanding about how

accommodations related to these students' academic success in an online environment. The study

took place at a public university with 15,000 students less than two hours from the Canadian

border. In contrast to Phillips et al. (2012), in which few faculty reported being asked by students

to provide accommodations in online courses, this study of online graduate students with

disabilities found that almost all participants (10 of 11) requested accommodations from their

instructors. Results also indicated that most students stated that they discovered that not all

faculty understood their disabilities nor knew the appropriate accommodations to meet the needs

presented by the disability (Terras et al., 2015). Graduate students in this study indicated that

their disabilities presented concentration and scheduling challenges, but they asserted that online

courses offered them the desired flexibility and individualized pacing to be academically

successful.

Fichten et al. (2009) examined online education problems and possible solutions by

surveying 223 students with various disabilities from Canadian colleges and universities via

online questionnaires. The most common problem reported was the inaccessibility of websites

and course learning or management systems and course websites developed by professors,

departments, or schools. Another area reported included technical difficulties with e-learning and

connecting to websites, problems downloading and opening files, and web pages taking too long

to load.

A mixed-design study by Barnard-Brak and Sulak (2010) examined the attitudes of 83

students with disabilities toward requesting accommodations in the online learning environment

compared with requesting accommodations in the face-to-face learning environment at a single,

large public university located in the southwestern United States. The results of this study

indicated that students with disabilities have similar feelings towards requesting accommodations

whether in an online or a face-to-face learning environment. Results, however, revealed that students with physical disabilities appeared to have more positive attitudes toward requesting accommodations in the online versus face-to-face learning environment.

Students with Learning Disabilities and Online Education

After a thorough review of literature concerning students with learning disabilities in online courses, Madaus et al. (2012) stated that "to date, few studies have been published that examine the experiences of students with LD and ADHD in online courses" (p. 23). Although postsecondary students with learning disabilities make up a significant segment of the online education community, they are among the least considered in the design of online learning (Kinash et al., 2004).

There are numerous studies that explain how students with learning disabilities benefit from proper academic services, support, and adequate accommodations provided by postsecondary institutions (e.g., Barazandeh, 2005; Cawthon & Cole, 2010; Elliott & Marquart, 2004; Graham-Smith & Lafayette, 2004; Hadley, 2007), and there are vast studies that note how instructional technology produces positive effects in students with learning disabilities in achieving student success, confidence, independence, and higher retention rates (e.g., Jimenez et al., 2003; Kelly, 2000; Mull & Sitlington, 2003). However, few studies have considered the experiences of these students in online courses. One such study was conducted by Simoncelli and Hinson (2008) as a qualitative investigation of five college students (two with learning disabilities) enrolled in an online summer course. Their findings concluded that students with learning disabilities did not realize what was expected of them on discussion boards and spent less time on course discussions than students without learning disabilities. Neither the students with nor those without learning disabilities found audio enhanced lectures to be helpful, as some

had technical issues downloading the large audio files while others reported that the audio was distracting. The students with learning disabilities reported having difficulty with the computer-based test, due to the "punitive" time constraints.

Another qualitative study conducted by Hollins and Foley (2013) was designed to interview and observe 16 college students with documented learning disabilities in online courses. The goal was to learn more about the experiences of these students as they interacted with the virtual online campus. The students were interviewed while completing eight tasks in an online learning environment. Tasks were chosen from those typically performed by college students, including include finding the email address of an instructor, locating a journal article in the library's online database, and identifying the textbook for a course on the bookstore web page. Hollins and Foley's (2013) findings identified features in a virtual campus that were coded as helpful and unhelpful in the students' experiences. These findings reinforced the need for web designers to consider accessibility and usability principles when designing online education.

Similar results were found in a study by Madaus et al. (2012) comparing college students with and without learning disabilities with experiences in online education. This qualitative study interviewed 20 students (10 with learning disabilities). The students with learning disabilities described issues with unclear course organization and navigation as barriers, whereas other students did not note these issues. Additionally, students with learning disabilities highlighted the difficulty in completing the required reading for the online courses within the required time frame, and the difficulty of understanding faculty's explanations when given via email or online posts.

Much like the barriers for students to receive accommodations, barriers preventing accessibility to technologies disadvantage individuals with learning disabilities from benefitting

from online courses. Technological preparedness has become a requirement for all college students, including those with learning disabilities, yet research suggests that students with learning disabilities are less comfortable than their nondisabled peers utilizing learning technologies. Parker and Banerjee (2007) studied 142 undergraduate students (44 with learning disabilities) in regard to overall technology skills and abilities. While all students studied reported being either fluent or moderately fluent with basic computer skills, students with learning disabilities were less comfortable using e-mail, multitasking computer activities, and conducting Internet searches. Noting that online and blended learning requires the ability to work independently, Parker and Banerjee (2007) observed that the increase in required technology use had significant implications for students with learning disabilities. Richardson (2010) also discovered that students with learning disabilities had a much lower pass rate in online courses, and their percentage of good grades was significantly and markedly lower than those of the non-disabled students.

Heiman (2008) conducted a study about women students with learning disabilities in online courses. The study focused on perceptions of the learning environment, coping strategies, and the subjective well-being of these students. Fifty female students with learning disabilities and 73 females without learning disabilities completed three different email questionnaires. The students with learning disabilities had difficulties with reading, writing, and/or spelling, and most of them had difficulties with the language requirement. The findings indicated that females with learning disabilities perceived the learning environment as less supportive and less satisfactory than the students without learning disabilities.

As the previous studies reported on the difficulties and barriers faced by students with learning disabilities, some contradictory research has shown that the integration of online

technologies into postsecondary education is beneficial to students with special needs, especially with students with learning disabilities who experience academic deficiencies and social difficulties (Raskind, Margalit, & Higgins, 2006). Heiman and Shemesh (2012) examined 964 undergraduate students (363 with learning disabilities) to determine the extent, frequency, and patterns of usage of the online courses, as well as the students' academic and social perceptions. The researchers found that students with learning disabilities logged onto the course site more frequently, communicated with the instructor more often, and were more academically active using the website. Heiman and Shemesh (2012) stated that technology can lessen the academic burdens and promote students' social interactions and motivation to pursue their academic goals.

Likewise, Klemes et al. (2006) explored how computerized learning environment assists students with learning disabilities enrolled in an online course at Open University of Israel. Twenty-four students with various diagnoses of learning disabilities participated, all of whom had taken distance learning and traditional courses in the past. One of the key results was the attitudes toward the electronic learning environment. Nearly all of the students said that this online environment "improved their understanding, concentration, comprehension, control and enjoyment" (p. 25). Additionally, less tutor help was required compared to studying conventional reading material in traditional courses, signifying a major advantage of a computerized environment for students with learning disabilities.

Chapter Summary

Postsecondary institutions are increasingly offering online classes in an attempt to cut costs, reach a more diverse student population, and keep pace with emerging technologies. These institutions are required by law, including Section 508 of the Rehabilitation Act and other disability rights legislation, to ensure that online courses and related technologies are accessible

to students with disabilities. Several studies have indicated that online classes can be made accessible with the correct use of design, training, and implementation (Fichten et al., 2009). However, research shows that most instructors fail to implement these guidelines, and institutions fail to enforce them. Although reasons for lack of accessibility in online education are well recognized—for example perceived cost, faculty resistance to change, and technology design issues—few solutions to these barriers are being implemented. The small amount of literature about postsecondary students with a learning disability in online education indicates an unwillingness to make courses accessible to these students, as well as a lack of support resources for those requiring accommodations. Some students with learning disabilities do succeed in college despite the difficult transitions, barriers in accommodations, barriers to access, faculty attitudes, and social relationships.

This chapter began by providing an overview of the history of learning disabilities. It then followed with another strand of literature discussing accommodations with special emphasis on the perspectives from the students' and faculty's perspectives in order to paint a backdrop of the current practices. A third area of the literature concentrated on online education with an examination from the point of view of the critical parties: students, faculty, and administration. Near the end of the chapter, equal access to information technology was explored with a special emphasis on barriers and design issues. The chapter ended with a look at higher education, online education, and college students with learning disabilities in online education courses. A resounding theme in the literature on online learning and people with learning disabilities of the past few years is that improving accessibility of online courses for students with learning disabilities promotes best practices in online learning for all students (Kinash et al., 2004). As the social model of disability continues to impact upon how disability services and accommodations

are provided in higher education, increased opportunities will become available to support

students with learning disabilities within the broader context of supporting all students to

successfully complete their program of study whether online or in the classroom.

Chapter 3: Research Design

This chapter examines qualitative phenomenology as the methodology employed in the current study. The goal of phenomenological research is to describe the "lived experiences" of a phenomenon. The purpose of the current qualitative phenomenological study was to explore the lived experiences of postsecondary students with learning disabilities in online education. Phenomenology focuses on the analysis of conscious and immediate lived experience and is sensitive to the uniqueness of each person (van Manen, 1990). The findings of the study can help postsecondary institutional leaders improve online learning environments for students with learning disabilities.

This chapter provides the background on the philosophy and method of phenomenology, key concepts of phenomenological research methodology, and a detailed explanation of the study design. It includes an overview of the postsecondary institution used as the research site, data collection, data analysis, credibility, dependability, limitations, trustworthiness, as well as ethical issues. Additionally, the selection methods, recruitment of participants, and sampling procedures are explained as it relates to this study. Finally, this chapter provides an explanation of the researcher's role and influence on the research study.

Purpose of the Study

The purpose of this study is to examine the experiences of college students with learning disabilities in online education. In the market-driven economy in which many universities now find themselves, online education has become increasingly popular (Allen & Seaman, 2011). At the root of phenomenology, "the intent is to understand the phenomena in their own terms – to provide a description of human experience as it is experienced by the person herself" (Bentz &

Shapiro, 1998, p. 96). The key to such understanding begins with drafting a central research question (Creswell, 2007).

Creswell (2012) noted that qualitative research questions are open-ended, general questions, which the researchers utilize to answer and guide the study. Moustakas (1994) emphasized the importance of open-ended questions in a phenomenological study and acknowledged how open-ended questions allow people to respond in their own words in order to capture their ideas about how things work. In phenomenology, the researcher collects narratives from the participants by posing good, probing, open-ended questions to solicit personal responses. This research focused on the experiences of student learning in an online-based environment and was guided by the following central question:

- How do students with learning disabilities experience online education?

In an aim to answer the central research question, a phenomenological approach was employed in this study. The phenomenological method of inquiry included the following sub-questions:

- Why do college students with learning disabilities choose online education?

- When given a choice, how do students with learning disabilities decide to take a course either through the traditional classroom or online learning?

- What are the benefits that college students with learning disabilities experience with online courses?

- What are the drawbacks and barriers that college students with learning disabilities experience with online courses?

Research Design

Certain challenges exist in studying the experiences of college students with learning disabilities, and lend themselves to qualitative research. Since there is a scarcity of literature on

students with learning disabilities in online education, a qualitative research method is most effective to capture the lived experiences of the participants. This is further supported by Creswell (2012) who claimed that qualitative research is best suited to investigate a central phenomenon in which little is known about the variables and more could be learned from the participants through exploration. Strauss and Corbin (1990) stated qualitative methods help to understand any phenomenon in which there is limited information.

Qualitative studies are appropriate when there is a lack of supporting literature, while quantitative studies center on a problem for which there is a plethora of literature (Creswell, 2012). Qualitative studies are concerned with nonstatistical methods of inquiry and analysis of social phenomena (Creswell, 2012). Thus, a qualitative design was chosen for this study. Stake (2010) defined qualitative research as "interpretive research" (p. 36). Qualitative research draws heavily on the interpretations of the researcher, the people studied, and the readers of the research reports. This provides insight into social issues that emphasizes human values, experiences, and perceptions (Stake, 2010). The qualitative research design utilized the researcher as the main source of data collection. Merriam (1998) stressed that qualitative research primarily employs an inductive strategy rather than testing existing theories. Simply stated, a qualitative study design enabled the researcher to gain an understanding from the wisdom and insight of students with learning disabilities who have experienced the myriad facets of online education.

Phenomenological Methodology

Considering the various qualitative approaches, phenomenology is designed specifically to study lived experiences of phenomena from the perspective of those who experience them (Moustakas 1994; van Manen 1990). A phenomenological design was considered the most

suitable for this study because it provided a clear process for setting aside the researcher's preconceptions about the phenomenon of students with learning disabilities in online courses. It also provided the means to a shared examination of the phenomenon by the researcher and participants. Merriam (1998) acknowledged that "by concentrating on a single phenomenon or entity, the researcher aims to uncover the interaction of significant factors characteristic of the phenomenon" (p. 29).

Phenomenology was an appropriate research approach because of its focus to understand the conscious and immediate lived experience of each unique person (Husserl, 1970; van Manen, 1990). This qualitative methodology allowed an open-ended format of exploration where many possibilities emerged because participants were not bound to closed questions seeking specific content. In addition, phenomenology allowed for attention to how the participants perceived their experiences in their online courses. Thus, because of the lack of critical inquiry located in the current literature, a phenomenological methodology was selected to give voice to the online educational experiences of students with learning disabilities.

The history of the phenomenological movement is deeply rooted in the works of European philosophers such as Kant, Hegel, and Mach; however, it was first applied to social science by the German philosopher Edmund Husserl (1859-1938) (Moustakas, 1994; Patton, 2015). Phenomenology grew out of a concern with scientific research which Husserl felt did not consider the personal experiences and connections between the human consciousness and objects that existed in the material world (Moustakas, 1994). Phenomenological methods share a common goal of focusing on exploring how people make sense of experiences and transform those experiences into consciousness (Patton, 2015).

Phenomenological research is a systematic methodology to make direct contact with the everyday world, uncover and describe the meaning of lived experience, and capture the essence of the personal experiences related to the phenomena (Moustakas, 1994; Patton, 2015). The aims of phenomenological research are to reach the essence of the individual's lived experience of the phenomenon while ascertaining and defining the phenomenon (Patton, 2015). Max van Manen (1990) stated:

> The essence of a phenomenon is a universal which can be described through a study of the structure that governs the instances or particular manifestation of the essence of that phenomenon… A universal or essence may only be intuited or grasped through a study of the particulars or instances as they are encountered in lived experiences. (p. 10)

In order to understand the phenomenological idea, it is important to examine the key concepts of phenomenology. According to Lin (2013) and supported by Moustakas (1994) and Patton (2015), the phenomenological method is comprised of three intertwining concepts: 1) the epoché, 2) phenomenological reduction, and 3) imaginative variation.

Epoché

Epoché, a Greek word implying to avoid, is the process of setting aside personal biases, beliefs, preconceptions, and assumptions in order to investigate the essence of the phenomenon (Lin, 2013; Moustakas, 1994). Researchers are human beings, and it is natural that they will bring their own personal experiences, preconceptions, beliefs and attitudes to the research study. It is these aspects that the phenomenological researcher strives to reveal and remove from the research process. The epoché is a reflective, introspective procedure to allow preconceptions and biases to enter and exit our consciousness freely and, once prepared, the prejudgments are to be written down (Moustakas, 1994). This intentional process is also referred to as "bracketing," a metaphorical use of a mathematical term used to separate expressions.

Basically, bracketing allows the researcher to be bias-free to describe the phenomenon from an objective perspective. The researcher utilized bracketing by describing his experiences with the phenomenon in Chapter 1 and utilized journaling as an effort to put aside life-long collections of knowledge, beliefs, values, and experiences in order to accurately describe participants' life experiences (Wall, Glenn, Mitchinson & Poole, 2004).

Phenomenological Reduction

Phenomenological reduction is the process through which the researcher continually returns to the essence of the experience in order to derive the inner meaning and structure (Merriam, 2009). The task is to describe the individual experiences through textural language, where the qualities of the experience become the focus (Moustakas, 1994). Phenomenological reduction is an elimination process to reduce the data gathered from the participants' experiences by eliminating overlapping, repetition, and vagueness. Additionally, the researcher must focus on the minutest details of the phenomenon in order to capture the essence of the experience.

Simply stated, phenomenological reduction is a means to clean the raw data in a prescribed process. Moustakas (1994) described the steps of phenomenological reduction. First, the researcher must utilize bracketing to focus the research and set aside all preconceived notions. Next, the researcher employs horizontalization, a process through which the researcher views the data collected together and gives equal value to each statement. This provides an opportunity to evaluate the experience back and forth to determine the condition of the phenomenon that gives it its character. Afterwards, repetitive and irrelevant statements are eliminated, and the remaining horizons are grouped into themes. Eventually themes will emerge that had not been seen before and will lead "to deeper layers of meaning" (Moustakas, 1994, p. 96).

Imaginative Variation

Imaginative variation seeks possible meanings through differing perspectives, roles, and functions (Moustakas, 1994). Merriam (2009) compared imaginative variation as viewing a three-dimensional piece of art—it is the process through which the researcher views the collected data through a variety of angles in order to see the data from all perspectives. By following phenomenological reduction, the researcher arrived at structural themes through the imagination variation process. Moustakas (1994) described imagination variation process as:

> The task of imaginative variation is to seek possible meaning through the utilization of imagination, varying the frames of references, employing polarities and reversals, and approaching the phenomenon from divergent perspectives, different positions, roles, or functions. The aim is to arrive at structural descriptions of an experience, the underlying and precipitating factors that account for what is being experienced; in other words the "how" that speaks to conditions that illuminate the "what" of experience. (pp. 97-98)

The imaginative variation complements phenomenological reduction. The former eliminates the irrelevant and unrelated, while the latter widens the scope of inspections to uncover the concealed and hidden.

Site Selection

Site and sample selection are an essential part of phenomenological studies. Miles and Huberman (1984) asked, "knowing then, that one cannot study everyone everywhere doing everything, even within a single case, how does one limit the parameters of a study?" (p. 36). In qualitative exploration, the intent is not to generalize to a particular population but to explore the central phenomenon extensively (Creswell, 2012); therefore, it is crucial to locate a site that represents the typical academic settings, students, and activities selected (Maxwell, 2012). Phenomenological investigation uses a form of purposeful sampling where participants are selected according to criteria specified by the researcher and based on initial findings. Sampling decisions aligned with those detailed by Maxwell (2012), in which he described site and sample

selection in qualitative research as "purposeful sampling" (p. 97). Bryant and Charmaz (2007) stated that purposeful samples are initially selected "to maximize variation of meaning, thus determining the scope of the phenomena or concepts" (p. 236). In this study, participants were selected because of their unique and meaningful experiences of the phenomenon being studied and have the potential to provide a richness of information that is suitable for detailed research (Patton, 2015).

This study purposely selected a single public university to provide critical case sampling. This institution is centrally located in the United States and resembles numerous comprehensive regional universities. It enrolled slightly over 12,000 students in 2015. It is accredited by the Higher Learning Commission, and is a member the North Central Association of Colleges and Schools. Several of the university programs are individually accredited by state and national organizations. The university consists of the main campus and a satellite campus recognized as the regional provider for technical and career education, offering 12 associate degrees and 15 technical certificates with a variety of industry-specific options, as well as certificates of proficiency and general education coursework. Because of its location, it makes good use of online courses, and within the last five years, instructors have begun to experiment more seriously with online course delivery. In addition, both campuses of this university have developed a major online component offering the following online degree opportunities:

Associate's degree in:

- Early Childhood Education (Pre-K)

- Logistics Management

- Business Technology

- Law Enforcement

- General Studies

Bachelor's degrees in:

- Early Childhood Education

- Emergency Management and Administration

- RN to BSN program

- Professional Studies with multiple concentration options

Master's degrees in:

- College Student Personnel

- Emergency Management and Homeland Security

- Health Informatics

- Teaching English to Speakers of Other Languages

- Educational Leadership

Specialist's degree in:

- Educational Leadership

Participants

The selection of participants is a critical step in defining the dimensions of the study (Bryant & Charmaz, 2007). Homogenous sampling involves selecting similar cases to further investigate a particular phenomenon or subgroup of interest; therefore, homogenous purposeful sampling allowed the participants to be selected in a targeted way to evaluate the phenomenon of online education among students with learning disabilities. This sampling strategy is particularly useful in exploratory research where a small number of cases can be decisive in explaining the phenomenon of interest (Creswell, 2012; Patton, 2002). Patton (2015) posited that purposeful sampling requires "selecting information-rich cases to study, cases that by their nature and

substance will illuminate the inquiry question being investigated" (p. 264). This purposeful sampling was employed because the selected site was sufficiently endowed with resources and participants to logically explore the perceptions of postsecondary students with learning disabilities enrolled in online education.

The criterion for selecting the sample from the population reflects the purpose of the study and identifies the information rich cases to study. The eight participants were identified based on the following criteria:

(1) be enrolled at the university during the time of the study,

(2) be registered with the Office of Disability Services with a documented learning disability, with no cognitive delays,

(3) be at least 18 years of age,

(4) have successfully completed at least one online course,

(5) be currently enrolled in a least one online course,

(6) have taken at least one traditional classroom course, and

(7) be an undergraduate student.

The first step of the research approval process involved submitting IRB applications to the University of Arkansas and the participating university (Appendix A). Once approved by the respective IRB committees, contact was made to the participating university's Director of the Office of Disability Services for assistance in identifying potential participants. A recruitment announcement (Appendix B) was emailed from the Office of Disability Services to all students who met the selection criteria describing the research study and its rationale.

Participants who expressed a willingness to volunteer for the research study were spoken to via telephone or email to discuss time commitments, explain confidentiality issues, answer

any concerns, and explain the need to review their educational records. Next, a face-to-face pre-interview was scheduled. During the pre-interview, all participants were requested to review and sign an informed consent form (Appendix C). This ensured that the ethical responsibilities of maintaining confidentiality and consent to recording were observed (Denscombe, 2014). Additionally, these participants agreed to commit to an additional interview session, plus be available for member-checking and follow up.

The volunteer profiles were examined in conjunction with consultation from the staff of the Office of Disability Services. Only eight of the respondents were selected and notified. The other qualified respondents were kept on record in case the identified respondents were later unable or unwilling to participant in the study. The participants were informed that they could withdraw from the study at any time without questions being asked. All participants are referred to here by pseudonyms to preserve their anonymity.

Sample Size

Sample size is a critical question for all research studies. A study that uses a sample that is too small may have unique and particular findings that are questionable. However, even studies with small sample sizes may help to identify ideas that merit further examination. Qualitative studies with samples that are too large are equally problematic. Whereas quantitative research has specific criteria that guide researchers' decisions about adequate sample size, these are only general principles based upon reflective judgment and negotiation for qualitative researchers (Russell & Gregory, 2003). The adequacy of a sample for a given qualitative study is determined by how comprehensively and completely the research questions were answered. Therefore, the tradeoff between depth and breadth in the research affects sample size decisions. Studies with smaller samples can more fully explore a broader range of participants' experiences,

whereas studies with larger samples typically focus on a narrower range of experiences (Russell & Gregory, 2003). Seidman (1998) supported reasonable coverage by asserting that "interviewing applied to a sample of participants who all experience similar structural and social conditions gives enormous power to the stories of a relatively few participants" (p. 48). Groenewald (2004) and Boyd (2001) regarded 2 to 10 participants as sufficient to reach saturation; Creswell (1998) recommended long interviews with 10 people; and Morse (1994) recommended a minimum of six interviews for phenomenological studies. Therefore, the researcher elected to interview eight students with learning disabilities to fully capture their experiences with online education.

Data Collection

In a qualitative research study, the researcher serves as the primary data collection instrument (Patton, 2015). The researcher in the role of the collection instrument must strive to remove all assumptions, biases, and preconceived thoughts about the phenomenon to be detached from the study and focus on the data collection methods (Lincoln & Guba, 1985). The researcher typically relies on a variety of methods for data collection. Marshal and Rossman (2014), as well as Merriam (1998), describe data collection in qualitative studies as three distinct strategies: interviews, observations, and document analysis. Phenomenology research requires a careful, methodical, and thorough effort to capture and describe how people experience a phenomenon. As noted by Patton (2015), this includes "how they perceive it, describe it, feel about it, judge it, remember it, make sense of it and talk about it with others" (p. 115). In order to collect this data, researchers must undertake in-depth interviews with subjects who have directly experienced the phenomenon as opposed to second-hand accounts (Patton, 2015; van Manen, 1990).

For this phenomenological study, the researcher selected personal interviews as the primary method for data collection. This study utilized two sessions, a pre-interview and single-session interview using standardized interview protocols. Although standardized to eliminate the opportunity for differences in in the interview process, Patton (2015) recommends conversational interviews focusing on capturing the lived experience. According to Moustakas (1994), "The phenomenological interview involves an informal, interactive process…aimed at evoking a comprehensive account of the person's experience of the phenomenon" (p. 114). Through semi-structured, in-depth interviewing, the researcher was able to explore and understand each participant's experience with online courses. The pre-interviews and interviews allowed the collection of specific knowledge and perceptions from college students with learning disabilities to provide insight into their individual experiences and determine relevant themes. During the interviews, memoing documented any additional key insights and non-verbals such as expressions, gestures, and body movements demonstrated by the interviewees.

Pre-interviews

The pre-interview began by engaging the participant in social conversation. The intent of this session focused on establishing a proper relationship, developing an understanding of the participants' learning disabilities, and obtaining insight on the experiences of these students with learning disabilities by using open-ended questions (Heiman & Kariv, 2004; Heiman & Precel, 2003). As recommended by Marshall and Rossman (2014), the pre-interview sessions were more like conversations than formal events in order to allow for adaptability, enable trust, and gain rapport allowing the participants to share information that they might not normally reveal by any other means. A brief overview of the study and its purpose was provided. The researcher asked participants to complete a pre-interview questionnaire (Appendix D) that asked the students to

provide some general demographic information. The researcher also reviewed the informed consent information with each of the study participants and asked that they read and sign it if they would like to continue as study participants (Appendix C). The informed consent granted written permission to proceed with the interviews and for the meetings to be audio-recorded. Additionally, the researcher explained to participants that they had the option to stop the interview or withdraw from the study at any time without penalty. The pre-interviews occurred in a private office within the Office of Disability Services.

Interviews

The primary interview session was scheduled within a week of the pre-interview and followed a very structured interview protocol (Appendix E). This interview method would, therefore, reduce interviewer bias and increase validity and reliability because it enabled the interviewer to explore participants' views rather than influence them (Denscombe, 2014). This session consisted of an in-depth follow-up interview. To better understand each participant's experiences with online courses, each was asked semi-structured questions to access their feelings toward and describe any obstacles in online courses. Appendix F depicts the open-ended questions that were designed to answer the central and sub-questions of this case study and to allow for exploration of emerging topics. A private room was used for the individual interview sessions eliminating any interruptions. Interviews were held at times convenient to participants and averaged 45-60 minutes. The researcher conducted an interview with each participant on topics that were guided by the open-ended questions, which represented the study's purpose and research questions. Interviewees were encouraged to elaborate on their experiences with their online courses and their experiences with any accommodations.

The final part of the primary interview dealt with general remarks or recommendations the participants felt had not been taken into account previously. The aim was to give participants the chance to stress issues they personally found important and to validate their respective interpretations (Charters, 2003). Finally, a short debriefing was accomplished, asking if they had any further thoughts and comments on the research experience. During this in-depth interview session, the researcher recorded the participants' responses and non-verbal expressions while performing any online tasks.

In qualitative research, it is recommended that all semi-structured interviews be recorded (Creswell, 2012; Merriam, 2009). During this study, all interviews were digitally recorded and analyzed to determine relevant themes. Each recorded interview session was saved to centralized mass storage and a USB flash drive, and the audio recordings of each interview session were transcribed verbatim to allow the raw data to be analyzed numerous times.

The effectiveness of incorporating the pre-interview and interview sessions and the validation of the interview question sets were provided through a pilot study. According to Creswell (2012), the pilot study is a small-scale test of the questions and procedures that the researcher plans to implement. This preliminary analysis of the process assessed the logistics of the procedures, clarity of the question sets, and reliability of the results (Sampson, 2004). This test allowed the researcher to make changes based upon feedback, comments, and completion of the proposed interview sessions. Sampson (2004) suggested that while pilots can be used to refine research instruments such as questionnaires and interview schedules, they have greater use still in qualitative approaches to data collection in predicting research problems and questions, in highlighting possible gaps in data collection, and in considering broader and highly significant

issues such as research validity, ethics, proper representation, and a safe, suitable interview environment.

A single college student attending the satellite campus and meeting all participant criteria, participated in the pilot study. This student met the requirements for the main study but only eligible students from the main campus were selected to prevent any perceived biases due to the researcher's position at the satellite campus. The pilot process allowed the researcher to evaluate the interview questions, protocols, procedures, and logistics (Creswell, 2012). Additionally, this provided an opportunity for biases to be identified through observing the participant's responses and reactions to the questions, as well as by asking the participant whether any questions seemed biased (Secomb & Smith, 2011), aiding in the researcher's ability to bracket any preconceptions. Secomb and Smith (2011) captured the importance of this investment: "the results of this pilot study may not be meaningful and have not been reported, the outcomes and experiences are" (p. 35). After completing the pilot interview session, the researcher solicited comments and feedback regarding the interview directions and specific questions. The responses were recorded and reviewed. The questions were revised to include some of the suggested changes to the directions and specific items. At the conclusion of the pilot study, the participant was given a note of appreciation.

Data Analysis

The goal of phenomenological research is to understand a particular experience by obtaining information from individuals who have lived the experience and then illuminating the central themes and fundamental structure of the experience through analysis (Moustakas, 1994; Patton, 2015). Essentially, the goal is to identify common themes in the participant descriptions in order to arrive at an overall understanding of the phenomenon under study. Data analysis

includes the highlighting of "significant statements, sentences, or quotes that provide an understanding of how the participant experiences the phenomenon" (Creswell, 2007, p. 61). This leads the researcher to *horizontalization* or the attempt to understand the participant's experiences (Moustakas, 1994). Although multiple variations exist describing the data analysis steps (Creswell, 2007; Creswell, 2012; Moustakas, 1994; Polkinghorne, 1989), data analysis simply involves collection, organization, classification, categorization, search for patterns, and synthesis to achieve an in-depth, holistic understanding about a topic of concern. This study employed the seven-step Moustakas (1994) modified Van Kaam method for analyzing data from a phenomenological background. See Figure 2 for the steps of data analysis.
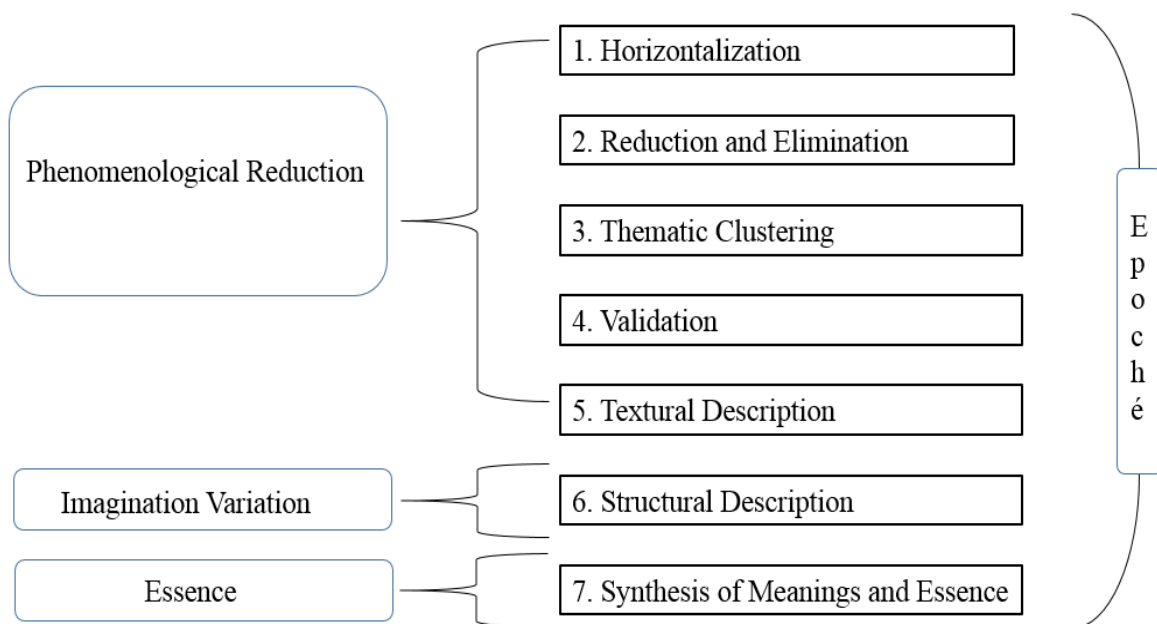
Figure 2. Data Analysis Steps

Step 1 - Horizontalization: In this step of the data analysis the researcher lists every expression relevant to the experience and performs initial groupings. The researcher should look at all data as though every statement has equal value and work to develop a list of non-repetitive, non-overlapping statements (Creswell, 2007; Mousaka, 1994). If statements are found to be irrelevant to the research, repetitive, or overlapping, these statements should be ignored. The

"cleaned" data, remaining parts of the data, are referred to as horizons. Simply, the researcher

organized all transcribed data, found statements in the interviews about how each individual is

experiencing the topic, listed the "significant statements," treated each equally, and worked to

develop the list of significant, relevant statements to provide a clear portrayal of the

phenomenon.

Step 2 - Phenomenological Reduction and Elimination: In this second step, the researcher

clusters horizons into themes, reducing and eliminating unrelated statements. According to

Creswell (2007), each statement is tested to ascertain if it contains a necessary and sufficient

moment of the experience. Moustakas (1994) stated that the horizons are the textual meanings

and provide the clear portrayal of the phenomenon. The researcher reviews each transcript and

interpreted the essential "invariant constituents" or essence of each participant's responses, while

vague and redundant responses were removed. The purpose of this analysis is to develop a

greater depth of understanding from what is available and to direct the researcher in regard to

other relevant data that could potentially contribute to the knowledge base regarding the research

topic. The researcher read the text at least once and made notes in the margins of the transcripts.

These notes provided the basis for themes to arise and be coded. Through the process of coding,

themes emerged from the data (Merriam, 1998).

Step 3 - Thematic Clustering: In this third stage, the researcher described the essence of

the experience based on the themes collected, or clusters to create the "core themes of the

experience" (Moustakas, 1994, p. 121). By clustering the horizons, the researcher identified

common themes or essences to provide relevant meaning to the structure of the experiences.

Step 4 - Validation: In this step of phenomenological analysis, the researcher compares

the clustered themes against the complete record of the participants to include observations, field

notes, and literature to verify accuracy and clear representation across all data sources. This included the continuous revisiting and re-reading of the transcripts to validate the bracketed textural descriptions and clustered themes.

Step 5 - Textural Descriptions: In this phase, the researcher focuses on the textural description or narrative to describe the experiences of the participants by using verbatim excerpts for the interview sessions. The researcher composes an extensive description of what the participants described for their unique experiences. "In the textural description of an experience nothing is omitted; every dimension or phrase is granted equal attention and is included" (Moustakas, 1994, p. 78).

Step 6 - Structural Descriptions: In step 6 of the analysis, the researcher writes about "how" the phenomenon was experienced by the participants (Moustakas, 1994). Similarly, Creswell (2012) explained that the structural descriptions focus on "how" the experiences happened and the researcher reflects on the setting and framework in which the phenomenon was experienced. During this step, the researcher used imaginative variation to visualize how the experiences occurred to develop the structural themes. After analyzing the data, the researcher was able to synthesize the meanings in such a way as to obtain true, accurate, and complete structural descriptions.

Step 7 - Synthesis of Meanings and Essences: Constructing a textural-structural description of the totality of meanings and essences of the lived experiences completed the final step of the modified van Kaam analysis. The intention of this step is to provide the essence of the lived experience. This final step, according to Moustakas (1994), is the "intuitive integration of the fundamental textural and structural descriptions into a unified statement of the essences of the experience of the phenomenon as a whole" (p. 100). From the thematic categories, a textual

description of the participants' experience was developed that led into the researcher's interpretation of the lived experiences of the eight college students with learning disabilities and their perceptions of online education.

<div align="center">**Trustworthiness**</div>

Truth in qualitative research depicts accurately an independent existing reality (Guba, 1981). Sandelowski (1993) argued that "rigor is less about adherence to the letter of rules and procedures than it is about fidelity to the spirit of qualitative work" (p. 2). The criteria for judging trustworthiness in qualitative studies may differ; however, the standards are equally rigorous. Padgett (1998) defined trustworthiness as the result of "rigorous scholarship" that includes the use of defined procedures. Research procedures utilized by qualitative researchers to establish rigor are an important way to increase confidence that the voice of the participants is heard. Guba (1981) developed criteria of trustworthiness that encompassed the principles of internal validity (credibility), external validity (transferability), reliability (dependability), and objectivity (confirmability). Lincoln and Guba (1985) elaborated on six techniques to ensure trustworthiness: (a) prolonged engagement, (b) persistent observation, (c) peer debriefing, (d) member checks, (e) triangulation, and (f) audit trail. Loh (2013) further supported these techniques as he examined the necessary criteria for evaluating qualitative studies; thus, the researcher applied four of the six critical techniques to ensure trustworthiness in this phenomenological study.

Persistent Observation

This study utilized persistent observation in order to pose the question whether the research has been done in order for the most relevant characteristics of the case study to be identified. "The purpose of persistent observation is to identify those characteristics and elements

in the setting that are most relevant to the object being studied and focusing on them in detail"

(Lincoln & Guba, 1985, p. 304). Persistent observation provided depth to the study (Lincoln &

Guba, 1985), and the appropriate depth and detail were employed by utilizing questionnaires and

formal interviews with multiple participants. Data analysis was conducted after the data

collection process, allowing emergence of patterns and themes to assist in providing depth and

direction of data collection, meeting the purpose of persistent observation. Although the

aggregated data sources do not explicitly illustrate the amount of detail gathered, descriptions of

the study methods provide evidence of persistent observation within this qualitative study.

Peer Debriefing

Peer debriefing, otherwise known as peer reviewing, is the review of the data and

research processes by others who are familiar with the phenomenon being studied. Lincoln and

Guba (1985) describe the peer reviewer responsibilities as challenging the researcher's

assumptions, methodology, and interpretations of the data. As directed by Frels and

Onwuegbuzie (2012), this qualitative study implemented peer debriefing by employing an

impartial colleague to review the development of the research study and completeness of the

researcher's findings, as well as provide feedback regarding the appropriateness of the data

collection and data analysis procedures. Peer debriefing with the institution's Coordinator of

Disability Services and Director of Student Success was used in this study to confirm

interpretations and coding decisions including the development of categories.

Member Checks

Lincoln and Guba (1985) describe member checks as "the most crucial technique for

establishing credibility" (p. 314). It consists of the participants in the study reviewing the data

and interpretations so that they can confirm the credibility of the information and narrative

descriptions. Using methodology described by (Creswell & Miller, 2000), the researcher has, throughout this study, addressed the member checks by reviewing and discussing, with participants, the accuracy of the findings. By having the opportunity to read the researcher's transcripts, each participant was able to validate their documented results. Additionally, the researcher incorporated participants' comments into the final narrative. In this way, the participants added credibility to the qualitative study by having an opportunity to react to both the data and the final narrative.

Audit Trail

An audit trail, as recommended by Lincoln and Guba (1985), documented each step taken in the data collection and analysis steps. In addition to raw data, the audit trail included notes and memos describing the coding strategy, how it applied it to the data, and how it was used to analyze the data. The audit trail also included a reflective journal including the schedule of interviews and observations, as well as notes and personal reflections about individual sessions. To add credibility, external auditors reviewed this documentation and processes to determine the trustworthiness of the findings.

<div align="center">

Chapter Summary

</div>

The purpose of the current qualitative phenomenological study was to explore the experiences of students with learning disabilities in online courses. In analyzing these college students, the phenomenological approach was a particularly suitable design to gain a deeper understanding of the nature and meaning of their everyday experiences (van Manen, 2008). For the researcher, phenomenology offered a means of investigating the complex social justice issue consisting of multiple variables of potential importance in understanding the rich, holistic account of a phenomenon (Merriam, 2009).

Chapter 3 included an introduction to the qualitative research methodology and the rational for choosing the phenomenological research method. The chapter addressed the research method used, the approach to participant selection, data collection, and analysis procedures. Finally, the procedures for establishing validity of the data and resulting conclusions were outlined. In the following chapters, the results of the study are presented. The next chapter contains information related to the results of the data analysis to include a detailed narrative on each participant in the research study.

Chapter 4: Results

This study explores the lived experiences of eight postsecondary students with learning disabilities in online education. A void in previous research and literature explaining this phenomenon compelled the interest in investigating the student perspective regarding the relationship between learning disabilities and online education. A qualitative framework was used to design the study. Methods common to phenomenological research guided data collection and analysis. The results are a culmination of the students' voices to share a deep perspective into their lived experiences. To study and answer the primary research question of how do students with learning disabilities experience online education, the researcher established the framework based on four sub-questions:

1. Why do college students with learning disabilities choose online education?

2. When given a choice, how do students with learning disabilities decide to take a course either through the traditional classroom or online learning?

3. What are the benefits that college students with learning disabilities experience with online courses?

4. What are the drawbacks and barriers that college students with learning disabilities experience with online courses?

The interview protocol provided a venue for rich description of how students with learning disabilities experience online education. Careful analysis of the interview transcript allowed identification of word and thought patterns, which set the stage for subsequent theme emersion (Moustakas, 1994; Patton, 2015). After reading each transcription multiple times, phenomenological reduction was accomplished by noting patterns in the way student participants described experiencing online education to create the categories. Then the categories were

analyzed to form the themes. Ultimately, four clustered categories developed from this effort and later led to the emergence of five themes representing the lived experiences of the eight participants.

The remainder of this chapter focuses on answering each of the research questions formulated for this study. The study allows the participants' voices to be heard regarding their particular experiences and thoughts, and interpretive comments are provided to add further thought on the interview data. The chapter concludes with a discussion of the themes that emerged from the study data.

Summary of Participants

Eight participants shared their experiences as part of this study to gain deeper insights into the lived experiences of college students with a learning disability in online education. All participants revealed difficulties with reading comprehension, focus in their reading, and/or reading comprehension. Interviews with participants occurred over an 8-week period. The participants included three men and five women ranging in age from 18 to 29, a blend of both demographics and student experience. Only two of the participants shared the same academic major, which provided for diverse perspectives. Three of the participants are seeking an associate's degree while the other five were pursuing a bachelor's degree. An equal mix of participants are majoring in traditional in-class programs and in fully online programs. The selected frequency data and participant demographics are depicted in *Table 1*.

Variable		n
Age		
	18	1
	20	2
	21	1
	22	1
	24	1
	28	1
	29	1
Gender		
	Male	3
	Female	5
Race/Ethnicity		
	Black or African American	1
	White	7
Academic Class Status		
	Freshmen	1
	Sophomore	3
	Junior	3
	Senior	1
Degree Type		
	Associate degree	3
	Bachelor degree	5
GPA		
	3.5 - 4.0	1
	3.0 - 3.49	3
	2.5 - 2.99	1
	2.0 - 2.49	3
Enrollment Status		
	Full time	6
	Part time	2
Learning Disability/Other Related Disability*		
	ADHD/ADD	3
	Anxiety Disorder	2
	Dyslexia	4
	Dysgraphia	1
	Language Processing Disorder	3
	Reading Impairment	2

*Participants may have identified with multiple listings

Table 1. Participant Demographics Frequency

Table 2 provides a brief demographic overview of the participants listed alphabetically by pseudonym. This table also includes their year of education, ethnicity, program of study, and type of learning disability. Demographic information is based on the responses from the pre-interview questionnaires completed by participants.

Pseudonym	Year	Race/Ethnicity	Program of Study	Learning
Courtney	Junior	White	Business Data Analytics	ADHD
DeeAnna	Sophomore	White	Business Technology	Anxiety Disorder Dyslexia
Heather	Sophomore	White	General Studies	Dyslexia Language Processing Disorder
Kameron	Junior	Black	Psychology	ADHD/ADD Language Processing Disorder
Keith	Junior	White	Vocal Music	Dyslexia Dysgraphia
Laura	Sophomore	White	Early Childhood Education	Reading Impairment Language Processing Disorder
Mindy	Senior	White	Early Childhood Education	ADD Dyslexia
Zackery	Freshman	White	Law Enforcement	Anxiety Disorder Reading Impairment

Table 2. Participant Demographics Overview

Participants

Qualitative inquiry provided the opportunity to engage with the student participants to investigate the phenomenon surrounding how they experience online courses. The following student participant descriptions are designed to help the reader feel the essence of their stories. One of the interview questions asked was *describe how and why you decided to take an online*

course. Although the results revealed that half of the participants "preferred" traditional classroom courses, while the other half "preferred" online courses, their individual descriptions and responses to this selected question are offered as a representation of their respective voices.

Courtney is a 20-year-old white woman and full-time student majoring in business data analytics, a traditional in-class program with online opportunities. She has completed four online courses and is not currently enrolled in online. She was diagnosed with ADHD at the age of 6 years old and with Anxiety Disorder at the age of 19. Courtney describes her learning disabilities as difficult to focus, and she finds it more difficult in her business courses than other courses. *"It was my mother that decided I needed to take an online class, so I decided I should take it online." "My other courses just didn't fit my schedule so I decided to take them online because of scheduling."*

DeeAnna is a 20-year-old white woman and full-time student majoring in business technology, a program completely offered online, in-class, or in combination. She has completed three online courses and is currently enrolled in two others. She was diagnosed with Dyslexia at the age of 8 years old. DeeAnna consistently referred to her need and accommodations for someone to read to her to assist in her reading disorder.
"Mostly because it wasn't offered as an in-class course." "With online it was scary at first."

Heather is a 24-year-old white woman and part-time student working toward an associate's degree in general studies. The program includes the option to take numerous online courses. She has completed one online course and is currently enrolled in one other. She was diagnosed with Dyslexia and Language Processing Disorder at the age of 6 years old. Heather consistently referred to her lifetime accommodation for extended time to assist in her reading and processing disorders.

"It was more convenient than going to a classroom, and I would be more available for family matters."

Kameron is a 22-year-old black man and part-time student majoring in psychology, a traditionally in-class program. He has completed two online courses from two institutions and is currently enrolled in another. He was diagnosed with ADD, ADHD, and Language Processing Disorder at the age of 7 years old. Kameron frequently identified his difficulties with writing and his disconnect with "putting words to paper."

"It was for the shear experience." "Great idea, save a lot of time, and professors work with you."

Keith is a 21-year-old white man and full-time student majoring in vocal music education, a traditionally in-class program. He has completed only one online course and is currently enrolled in a second one. He was diagnosed with Dyslexia and Dysgraphia in ninth grade. Keith is very adept with technology and learned how it could be utilized to support and supplement his accommodations.

"Well I have a really busy schedule because of my major, so it was easier for me to take some of my home time to take class instead of taking other time to fit in another in-class course." "On top of practicing and other time, I found it easier to put it in my schedule."

Laura is a 28-year-old white woman and full-time student majoring in early childhood education, a fully online program. She has completed three online courses and is currently enrolled in three others. She was diagnosed with Reading Impairment and Language Processing Disorder at the age of 26-years-old—"after years of issues." Laura highlighted multiple times the benefits of using software that reads to her.

"I needed the classes that were only online…because they were mandatory and I couldn't go into the classroom for those classes."

Mindy is a 29-year-old white woman and full-time student majoring in early childhood education, a fully online program. She is the most experienced of all participants in regards to completing online courses. Mindy has completed 14 online courses and is currently enrolled in 3 others. She was diagnosed with ADD and Dyslexia at the early age of 4 years old—"my mother took me out of state to be evaluated due to this state not recognizing learning disabilities at my age." Mindy is a highly active advocate for the equality of education for students with learning disabilities.

"I started by taking two courses that were being eliminated but were offered online for those currently in the program, and that is how it started. After that it's been ongoing for my degree."

Zackery is an 18-year-old white man and full-time student majoring in law enforcement, a fully online associate's degree program. He has completed only one online course but is currently enrolled in four others. He was diagnosed with Anxiety Disorder and Reading Impairment during his senior year in high school—"I didn't have any true accommodations in high school because it was identified so late." Zackery hates the idea of reading—"it scared me when I saw the books and saw how big they are."

"I took online classes because we were supposed to—because most aren't available in class."

Emerging Codes, Categories, and Themes

The final themes emerged from the data analysis framework described in Chapter 3. This framework created a new structure for the interview data (rather than the full original accounts given by participants) that summarized and reduced the data in order to answer the research questions. Numerous descriptive labels were assigned to excerpts of the raw data derived from

the participants' interview transcripts. These codes were then organized into categories, clusters around similar and interrelated ideas and concepts. Finally, the essence of the meanings were synthesized to develop the themes, interpretive concepts that describe and explain aspects of the data. Essential themes are the infrastructure for the descriptive and interpretive dimension of the lived experiences of college students with learning disabilities in online courses. They are fundamental to the experience and understanding of the total phenomenological dimension. They are the "aspects or qualities that make a phenomenon what it is and without which the phenomenon could not be what it is" (van Manen, 1990, p. 107).
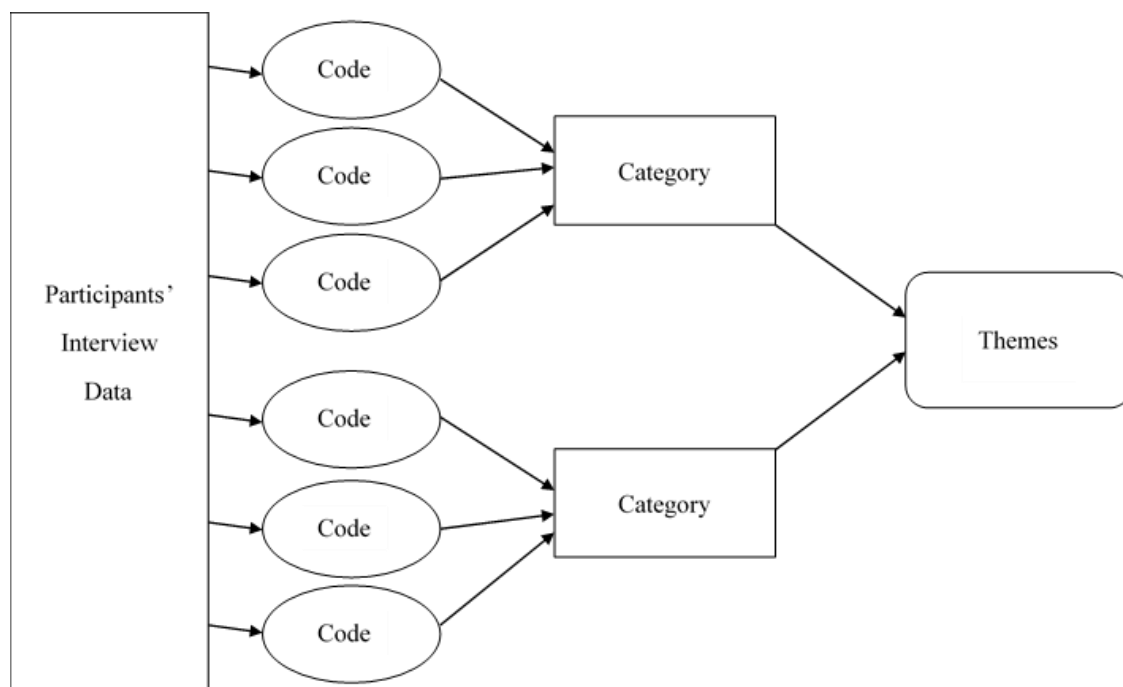

Figure 3. Data Analysis Framework

Four categories emerged from this analysis of the qualitative data to emphasize five major themes. The four categories are as follows: (1) faculty engagement, (2) student engagement, (3) course organization, and (4) needed resources. These four categories and their connections resulted in the five major themes determined to be the results of this study:

(1) students with learning disabilities like the convenience and flexibility of online classes, (2) online structure and organization affords students with learning disabilities more time to process and understand information, (3) students with learning disabilities feel more independent and confident with the structure and organization of online courses, (4) students with learning disabilities perceive a lack of interaction in online classes, and (5) instructors lack understanding and support for accommodations for students with learning disabilities. These five major themes resonated throughout the stories of the interview participants.

Theme 1: *Students with Learning Disabilities Like the Convenience and Flexibility of Online Classes*

Regarding satisfaction and fulfillment of online courses, this group of eight students with learning disabilities appreciated the convenience and flexibility of online learning, the ability to set their own pace with their coursework, the ability to manage their time, and the ability to work around other commitments. This theme relates to research sub-questions 1 and 3, thus the ensuing data speak to how students with learning disabilities describe quality in terms of structure, organization, design, deadlines, and workload.

When asked to describe their decisions to take online courses, their experiences during these courses, their comparisons to traditional in-class courses, unsurprisingly, all interview participants mentioned the advantages and benefits of the flexibility of schedule in their responses. In fact, all eight participants self-disclosed that being able to work at their own pace was one of the things they liked most about their online experiences: "I don't use as much gas and money"; "Time was easier. You got to take it step by step"; "The advantages are working at your own pace"; "It seems a little easier than sitting in class three days a week"; and "Definitely would take more online because of the flexibility of it."

Participants also strongly preferred the convenience and flexibility of pursuing a degree online, which allowed them to study "anytime, anywhere" and still tend to family and financial responsibilities. Concerned with convenience to meet other commitments, all eight participants indicated the inherent ability of online courses allowing them to meet those commitments. Heather noted:

> It was more convenient than going to a classroom, and I would be more available for family matters. It helps with free time so I can help my family. I'd take a bachelor degree that was totally online, because my family needs me.

DeeAnna remarked prior to the recorded interview and confirmed during her member checking that the flexibility of online courses to allow her to work and support her immediate family needs are critically important. Laura also cited the importance of the flexibility in her schedule as a single mom, "I can work [on online courses] whenever I want to. I start Monday at 8:00 in morning from when my kids go to school until 3:00 in the afternoon, and I will do that Monday through Friday." Mindy simply stated that these online courses required "less time that had to be spent on campus." Keith relayed that his major in music requires additional practice time, and online offering provide a tremendous benefit as expressed:

> Well, I have a really busy schedule because of my major, so it was easier for me to take some of my home time to take class instead of taking other time to fit in another course. I found it easier with time. On top of practicing and other time, I found it easier to put it in my schedule. I didn't have to put as much of my personal time in this class. The time was beneficial. I didn't have to attend class so that time I used to practice my music and spent on other classes.

Laura denoted her enthusiasm about the comfort of online learning, "I can actually in my own comfort take the test any time I want to. I can sit there and take it anywhere in the house I want to. I can be comfy."

Some participants specifically noted the need to work in order to support their education, and they appreciated the convenience online courses provided for their work schedules. Zackery highlighted:

> Online classes are pretty good. I like them, actually, I love them because they are on your own time and with me working a full-time job and being a full-time student, online courses are always on your time.

Kameron and Mindy underscored similar inputs, respectively, "I could work during the week when taking online classes and make the heavy duty studying during the weekend," and "I like how it's flexible so you can work full-time and go to school full-time." Courtney furthered this point after her recorded interview by explaining her intentions to take her entire last semester online to allow her to compete for a highly selective paid senior internship.

Related to schedule flexibility, six interview participants directly highlighted the ability to complete a course early. Courtney stated:

> Like my college algebra, I was able to do well on classes I enjoyed, and it was self-paced. I wish they were all self-paced—I would do better. Mostly I could finish it early. One class was a month and half long but I finished early. That is the advantage of self-paced, and I can finish early.

However, Courtney also posed the suggestion for instructors that "if a class is self-paced, allow the exams to be self-paced so it all can be finished early." She recalled, "When the final exam happened, I forgot everything because I finished all the assignments early, so I had to go re-read." Mindy offered her inputs, "They make it convenient so you can work ahead, and I like that. It's not encouraged, but you can…I like that." DeeAnna had similar comments, "you could do it at your own speed, while in class you go at everyone else's speed". Laura also expressed her satisfaction with the flexibility of learning at her own pace:

> What gave me a positive feeling is that some people told me that in some classes you could go at your own pace. Like if you get ahead of somebody, you can go ahead in that

chapter and not wait on everyone else…but some classes let you go at your own pace and don't have deadlines. I get to move at my own pace. I don't have to wait for everyone else.

Heather expressed comparable thoughts, "No constraints on deadlines. In class, you may have to do it slower or with the class. In my 3-D class I am already done two weeks ahead of schedule."

These responses highlight that flexibility and convenience are major factors for students' with learning disabilities decisions to take online courses. They appreciated that online courses provided the freedom to work and study simultaneously, and to do so on their own terms.

Theme 2*: **Online Structure and Organization Affords Students with Learning Disabilities More Time to Process and Understand Information**

All eight participants found the structure and organization of online courses beneficial. Mindy offered the simple statement that "it takes students with learning disabilities more time to complete their course work." She and the other participants expressed that online classes often offered students more time to master the course learning objectives. This second theme relates to research sub-questions 1, 2 and 4, and highlights how students with learning disabilities perceive the importance of extended time to learn and be academically successful.

Online classes do not have less workload but most times more reading is required due to the lack of traditional lecture. One of Kameron's negative perceptions of online courses was captured in his comments that "the main drawback is a lot of reading and trying to drill it into your head until you're familiar with it," whereas in traditional in-person courses where "applying what is read is difficult." All eight participants had difficulties with the reading workload required to be successful in their online courses; however, the structure and schedule flexibility provided them with the ability to complete their assignments—more reading but more time to complete it. DeeAnna described the importance of time in regards to her reading challenges to complete learning assignments:

> For online, most difficulty is reading the chapters that are assigned, then actually trying to find the questions for the assignments. They are not strictly "what is this" questions, but they are application. They are not always in the chapter she [instructor] assigned. Assignments took me longer than most people. In one online class, even though she gave you in-depth problems, you had time to go find the answer, but in class, you didn't have enough time.

These comments highlight the importance of the inherent time management and flexibility provided in online education providing these students with the ability to manage their workload.

DeeAnna mentioned on multiple occasions how this flexibility allowed her to compensate for the amount of time required to complete her reading and writing assignments, and Keith explained how online courses forced him to "have to read every week—I read during the weekends." In in-person courses, this was not his normal studying practice. Zackery made similar remarks, reflecting on his history of anxiety attacks caused by his lack of time throughout secondary and postsecondary classes, "I have issues with my anxiety when I take tests and do essays, but it [online] kind of lowers it because I'm not around people [and] because I'm free and I could just quit until I calm down." He further explained how the online environment benefits his learning disabilities:

> The online classes are actually easier because it lets you do it [tests and assignments] how you want to do it and when you want to do it. For in-class assignments, they have more restrictions on you. Instead of an hour and twenty minutes, you have a week to get it done. The anxiety kind of lowered itself and helped it out because it allows me to be flexible with the time.

Laura also explained how online classes allow her to maintain her focus and lower anxiety that she has faced for years because she can "work on one assignment for a bit then work on another, then I take a break and go walk. I do this all day, because I can split it up."

The previous expressions towards the flexibility of the schedule of online courses highlight the possibility to alleviate the student apprehension and concern for complicated reading and writing assignments. Other online teaching techniques and methods were noted as

means to reduce the reading workload for the participants. Heather revealed how she "likes more visual [aides] to comprehend it better to minimize the reading and to have more hands on learning"; and Kameron mentioned how viewing prerecorded video lectures allowed him more time to process new information, as well as supplement his ability to read the textbook assignments. Similarly, Laura noted "Some teachers record their lectures to allow students to watch anytime they want to. I would watch and stop it and rewind it. I could take notes."

Another area where more time to process information online courses is critical in the eyes of the participants included timed tests. Extended time to take tests was perceived as a valuable accommodation because anxiety was lessened and more time was granted for thinking and processing test questions. Laura's initial description of her being overwhelmed by timed tests highlights the stress felt by all eight participants:

> The tests…the tests…the time is 30 minutes to an hour. On most exams, I get an hour but there are 100 questions, and it takes forever for me to read that. So I have the program to read it, but when I'm in class, I would have a person as a reader to tell me what words meant. The limited time is hard for me. It is hard because I'll just push buttons because I don't want to run out of time. In class most teachers will let you stay behind to finish, but online is strictly based on time.

Keith's initial concerns before taking an online class included "having enough time on the online tests and to have enough time to read the information on the test." The flexibility afforded by online courses may be an asset to students with learning disabilities, particularly those lacking focus and reading comprehension.

The participants had mixed experiences with timed exams. When given sufficient time or no time constraints, the participants found this to be beneficial to their learning, while those that continually had limiting test times found this to be a learning challenge. DeeAnna stressed that "timed tests were problems, but appreciated the classes that didn't have timed tests," and one improvement is to "have extra time on tests because I go down to the wire on most of them…add

113

a little more time." Heather also had her issues with timed test stating "on the tests, my teacher has them timed. It's an hour and something…I am a bad test taker. I made Ds on all of them. I didn't know if I could ask him for more time or not." As denoted in Chapter 2, Denhart (2008) found that students with learning disabilities are hesitant to ask for their accommodations, and extended time is critical in mitigating the stress of these students' learning. Keith expressed this idea during his interview:

> I didn't apply for any additional accommodations, so the teacher didn't put any additional time on the tests, and every test I barely finished in the time limit. I could have used the extra time on every test. It put a lot of extra stress when you take the test and you don't have the accommodation in place. You start worrying about the time versus the questions on the test.

However, some participants such as Kameron noted their positive experiences with online faculty providing the extended time. Kameron stated:

> Because [online] tests are on a timer, the professor gives us more time than needed, so I never asked for more time. A 50-question test was 3 hours, and 20 question test for 2 hours…it is double the time needed, or maybe he is giving me extra time and the other students have less…I don't really know.

Likewise, Mindy expressed her appreciation of the extended test time and lack of timer:

> It benefits me to take it at home so I don't have a timer. At home, I feel relaxed with my reader and taking the test. Most tests have time constraints but there is no timer on Blackboard that makes me tense.

These participants expressed that taking an exam in one's home provides a more relaxed atmosphere than the traditional proctored exam setting. And, in many cases, online exams are not timed, which reduces the stress for many students who have lower levels of reading comprehension due to their learning disabilities.

The participants rely heavily on the instructor to "feed" them the required material when they attend traditional lecture courses and do not feel that they need to reinforce or supplement lectures with the assigned textbook readings. However, in online courses, the participants felt the

reading was a core aspect to learning, and it required more time in order to process the additional amount of "necessary" reading. Online instruction requires students to read for information, and apply and manipulate learned information, as well as self-assess learning (Gregg et al., 2006). As a result, students with learning disabilities can struggle with the academic skills necessary to learn, such as reading complex content material. Keith summarizes this theme in his recommendation to online faculty to provide extended time to process and learn the required information in online courses:

> It's the time, how much reading you are putting in your class. If you are asking to read seven chapters and we have a test next week, that is not fair. I have seen a class force you to read all 30 chapters, but students with learning disabilities can't keep up. Break things into chunks. I don't think it's the structure, as students with learning disabilities have figured it out, it's the tests and the readings—it's the amount of work expected.

To minimize the impact of these learning deficiencies, appropriate accommodations and supports are essential to achieve success in postsecondary courses (Lindstrom, 2007). Extended time was identified as an overwhelming necessity to accommodate the learning of students with learning disabilities.

Theme 3*: Students with Learning Disabilities Feel More Independent and Confident with the Structure and Organization of Online Courses*

In addition to the benefits of schedule flexibility and extended time to process information, the participants also convey that online courses were beneficial in the realization of independent learning and self-confidence. Although flexibility, convenience, and self-paced assignments are appealing, they necessitate self-discipline, motivation, initiative, and technical skills—derivatives of independence and self-confidence—to succeed in online learning. Similar to the first theme, this theme also relates to research sub-questions 1 and 3, and describes the importance of the online structure, organization, design, deadlines and workload.

Although the amount of reading and timeframe of traditional courses caused all participants concerns, the intrinsic minimization and/or elimination of time restrictions created a sense of independence from needing their accommodations such as extended time, note takers, readers, etc. Mindy's statement concerning accommodations highlighted the overall view of the participants' perceptions of independence:

> In online I am free—I'm not tied down with the accommodation world. I'm not tied to the letter with all my accommodations. I don't have to contact my teachers about accommodations. If I have tests, they are already built with extra time. Otherwise I try to do the rest on my own, and this is what online provides. The only two things I ask for are extra test time and one question at a time; otherwise I try to be more independent.

Zackery, Mindy, and Kameron all stated emphatically how the structure of online has supported their learning because "the accommodations are built in." Zackery further explained how online benefits his reading difficulties:

> In online classes, the extra time and flexibility goes into my favor, and it is on me to read. I'm not a good reader, so sometimes I can't read all of it at one time. Kind of get yourself ready to read and read a lot at one setting is pretty difficult from a disabilities perspective. We may have a week to read it but when I get tired I quit, then start back, then quit again when I get tired. The advantages are the unlimited amount of time I've had for tests, essays, or anything they ask for me to do.

Mindy reiterated that "I don't need a note taker for online," making her feel more confident in self-learning.

One aspect of increasing self-confidence and independence with the participants' online experiences included strengthening their organization and time management skills. Traditional classes tend to implement a more rigid deadline structure for the participants, while their online classes do not make them "feel rushed or bombarded with everything at once," according to Mindy. This ability to complete exams, assignments, and discussions provided more confidence in being successful in the online courses. Keith noted that he had "to learn not to procrastinate" within his online courses. He went on, "Most [students] being in online tend to procrastinate—it

makes it harder with the disability when you procrastinate. You have to learn in the beginning

not to procrastinate, or you won't pass, or it won't be as easy." Laura highlighted her comfort in

having control on "when and where" to take her exam, "the testing part in the classroom is

scheduled, but online you may take the test when you are available." Heather and Zackery

respectively noted similar strengths with "I try to be organized so I can do it [online]—no

constraints on deadlines. In class you may have to do it slower or with the class;" and "All the

tests are unlimited amount of hours. You can take a test one day, do the work the next day and

take a test another day, the same test. That what I love about it, you don't have a set time."

Kameron stressed:

> The advantages are that I am forced to have a set schedule. After my in-class classes, I go
> to the computer lab to see what I have to do. I figure out a schedule of when to do
> assignments and read chapters and to take exams. I thought it would help me with time
> management and organization overall. With time management, I thought it would force
> me to set up a schedule to fit it all in. I like to spread it out. I'm more productive with set
> schedule. I also now do my other coursework around my online classwork.

Mindy also noted her advantages with time management of assignments:

> My own pace allows me to work on a module…let's say you have four assignments in
> another class, I can pick and choose which to do. For example, if it is a paper, I can
> choose to spend more time on the paper part and prepare better for the presentation than
> to be rushed and to feel like I didn't get all my sources and do my research part.

Mindy further explained how online encourages her to be more structured:

> I prepare in the afternoons, and when a new module opens, I use my planner to schedule.
> I use a checklist to basically make sure I have everything done for that module at least a
> day before it is due.

Mindy promoted that being prepared supports her self-reliance noting, "I think being prepared is

the key versus learning disabilities. Online has been a big benefit and makes me independent

from the accommodations of in-class."

Privacy is also a concern for students with learning disabilities influencing their satisfaction with traditional in-class and online college classes. Privacy is valuable because it allows one control over information about oneself, which allows one to maintain a level of independence. Revealing having a learning disability can be difficult and embarrassing. In online, all participants highlighted the inherent privacy toward their learning disability compared to their respective experiences in the classroom—"not everyone would know about my issues."

Laura highlighted feeling inferior to other students with her statement, "In class it's embarrassing when teachers take you out of class to give you a test." Whereas, "In online, no one else knows, just you and the teacher. In class, everyone knows because of how you're treated." Heather also noted her feelings towards being singled out: "Sometimes the teacher would read to me in class, but online I read by myself." One major reason Zackery enrolled in additional online courses is he feels "Most people don't know about my disabilities, and it's an advantage that no one knows about them." Keith also mentioned how in an online course his accommodations were not spotlighted because "they didn't have to take any action since I had what I needed." DeeAnna does not feel socially accepted in her tradition classroom courses, but appreciates her social privacy in online:

> I am not good with people. I have trouble talking with people and am not comfortable with people. With online I didn't have to worry about that. I could stay home and do my own work without worry about anyone else. It is not a phobia, but I'm an introvert.

Mindy noted her social independence in online courses, "But on campus I find it like high school drama…you have cliques and always by myself. Online you don't have to be face to face."

Building confidence and providing independent learning opportunities are byproducts of online education. Independent learners take full responsibility for their own education, and in an online learning environment where teachers can be at a distance and support can be limited, the

skill of independent learning is highly helpful. Zackery's confidence captured the essence of this entire theme with his concluding remarks, "If you have a reading disability, don't be afraid to take online classes. If you are afraid, it is going to hurt you…go with the punches. You'll have to take an online class."

Theme 4*: **Students with Learning Disabilities Perceive a Lack of Interaction in Online Classes**

Because online learning exists outside the traditional classroom, it requires significant interactions. As a result, student satisfaction, achievement, and retention are all affected by these interactions. This theme relates to research sub-questions 1, 2, 3, and 4, thus the interview comments address how students with learning disabilities describe quality in terms of interactions, communication, feedback, and engagement. Regarding interaction, the vast majority found there to be a lack of interaction in online classes—instructor and peer interactions.

Interactions with Instructors.

Most interview participants complained of a lack of interaction with the online instructors. One common issue identified with the participants was their frustration regarding the lack of communication with the instructor. While a small minority (two participants) perceived it as a learning opportunity and preferred the method of being "self-taught," the majority were dissatisfied with the quality and timeliness of the communication exchange and perceived it as a learning deficiency. Participants believed that faculty interaction is critical for students with learning disabilities. Six of the eight interviewees said they preferred the instructor interaction in traditional classroom courses compared to their experience in online courses, and those six spoke specifically of a need for significant and fulfilling interactions with their online instructors—"I

will take as many traditional classroom courses because there is a teacher there to ask questions," said DeeAnna.

Several participants noted experiences of low faculty engagement in online courses that decreased their comfort level, such as Zackery's comments, "You don't have the one-on-one connection as you would in-class." He later reemphasized his thoughts, stating:

> You know with online classes you have to teach yourself. I mean of course, there is a teacher and you can email them, but it's all on you to do everything and if you need help, it's on you. We get to revise in class, online doesn't let you see how you would revise— the feedback is not as good. It's pretty hard with someone with anxiety.

Laura discussed her learning style and reiterated Zackery's comments:

> In class, you get to ask a teacher questions whenever you want to and some teachers will do problems in class and explain more to you. But online they will just type and tell you to do an assignment. They are not lecturing you like when you are in class. You have to be your own teacher in online classes, but it is hard for me to be my own teacher when I don't understand what to do.

Courtney explained, "When a student is struggling, I wish they would reach out. If I was having a problem, I wish they would have me visit in their office to discuss what the problem is." In order to actually reach the students with learning disabilities, the participants have highlighted that instructors must go the extra mile to build rapport with them and become their student advocates.

When compared to traditional in-class courses, the majority of participants sought the same faculty relationship. Heather emphasized "if you need more direction from a teacher, you need to take an in-classroom course." Courtney's most reiterated discernments involved the negative experiences due to the lack of instructor engagement, as she had numerous statements why she was "not gung-ho to take classes online:"

- "Teaching myself was more difficult,"

- "I learn better in in class than online. I like being taught in person than watching a recorded lecture,"

- "The less engaged the instructor, the more I struggled through the class. I had more trouble understanding,"

- "I don't think there is ever really an interaction with instructors in my online course,"

Kameron also described his experiences of needing more instructor interaction for his learning:

> The lack of a professor and relying on yourself is the main drawback. The professor is not there, and you are teaching yourself, and it is harder to do. It is your ability to teach yourself something that you don't know. If the instructor is there, they help you learn because they know the material and can explain it. You have an outside source that guide your thoughts versus getting stuck not understanding.

Kameron also expressed how he experienced the lack of social engagement with his instructor during his online courses and his preference of an informal, in the classroom learning environment:

> My preference is in-class informal environment to talk to people and to get more regular response. In-class it feels more welcoming, and you are there a set day and time. You can see the sincerity of their comments and you know they are there. You see them walking to class and be able to talk to instructors. As opposed to online, where you have to initiate it. You have to seek out feedback more versus it being given to you regularly.

Keith summarized these perceptions, "My experience was that this is solo ride with the teacher in your own little world unless you know someone else in the same class."

Furthermore, if the participant perceives the instructor as ineffective in guiding how to learn from online education, this lack of communication creates a lack of faculty engagement with the student. Keith described his faculty interactions:

> You can never put a face with a name. You never really know the teacher. I see an email but never really thought about the person. It wasn't an impact. My class was read the book, here's the test, and the teacher puts the grade in Blackboard. There was no real interaction at all.

DeeAnna gave several examples of her negative experiences with online faculty interactions:

- "My issue is that you email them [online faculty], and it takes a week to get back to you…poor feedback. I'm still waiting on answers," and

- "For online, it would be over the email, but they don't get back to you in time…it is really slow. But in-class they are right there. They can't ignore you."

Participants, such as Kameron and Heather, only contacted instructors when they experienced issues as noted by their respective comments, "I communicate when I couldn't figure out how to access assignments or how to submit. Also had to discuss when I didn't understand the test directions that were on the syllabus," and "I didn't have much communication with the instructor until I needed to know my grades." Kameron also explained how the lack of faculty communication caused him to feel as though there was no true assessment of his learning. He elaborated with "the professors try to help you understand, but it's limited because they don't know what you are getting [learning], like in in-class you see body language."

Although the majority of participants found the lack of instructor interaction to be a negative, two of the participants differed in their experiences. Laura deliberately made more effort to maintain teacher-student interaction to help her in studies. She noted that she maintained contact with all teachers in order to ensure she understood their directions; however, she also pointed out that:

> I actually am closer with the teachers in online classes, because I have to make sure I understand the assignments, I communicate much more with online teachers. Anytime I have questions, I email them a lot. Sometime it is not clear on what format we need so I reach out to them to get exactly what I need to do. I only talked to in-class teachers when I was there, so before I had online classes, I didn't want to bug them. But once I had online classes, I realized I needed to contact them frequently.

Laura reflected on her positive experiences with her online instructors remarking:

> I love my online teachers. One teacher told me to give her a call, and she talked to me about my accommodations, and she wanted to know about me. I told her about my classes, my life, and my children. She told me she would help me with my situation and

122

give me time if I got overwhelmed, and she would work with me. She was the only teacher that has ever worked with me like that versus just getting a letter with information. She actually has children with disabilities and she understood what I was dealing with…she cared. The others gave me what was needed, but she helped me. She actually told me if I didn't understand an assignment, I could call her and she would walk me through it.

Mindy has completed the most online courses of the eight participants and, in contrast, has had the most positive experiences with her online instructors. She noted multiple times of how she preferred online instruction because of the faculty:

So if you are struggling and you email them, they will break it down for you…or call you so whatever you need they will break it down…I've heard this many times. They do whatever they need to do, so that has been helpful. I feel like they are more on top of you than you realize. You can email them or professors say here is my number call me, or come to my house and I will help. You don't get this on campus. You get the classroom experience, but this is more of a one on one experience.

and

But online, the teachers are really interactive with you. One example is that I turned in my SWOT analysis and it was wrong, and she emailed me that she was giving me another chance. She fully explained what I didn't understand and told me what she expected, and she gave me a chance to redo it. There was interaction the whole time I was redoing the assignment. Any assignments that you do, whether discussions or papers or other assignments you get feedback and additional information, but I never got that kind of feedback in traditional courses. You depend on that feedback. They ask you to explain what you are trying to do. They [online] don't just grade your papers and go on. Everything has feedback, so there is that interaction that you don't get on campus. This interaction has been with multiple teachers…feedback, feedback, feedback.

The participants reported increased frustration in online courses when the quality and quantity of interactions lacked, and inversely, those with increased interactions detailed valuable learning experiences.

Some participants had recommendations to improve the instructor interactions and engagements. DeeAnna recommended that online instructors "give actual times where students could come to your office to ask questions versus just email." Heather recommend, "Maybe use video chats to talk to the students. Video chats can allow students to talk when not able to come

to campus and talk during office hours." Similarly, Mindy advocated for online instructor to "use more video chats like video presentations so you did more than email back and forth. This eliminates how email is taken and you can see the facial expressions." Also wanting more approachable relations, Keith proposed:

> Maybe be more personable, like a check in. Ask if you are getting all you need for accommodation, are you succeeding. A single email would help a student with a learning disability to feel like they can succeed. When you have 300 students it easy to miss the small number of students with learning disabilities.

Laura suggested:

> Teachers need to be interactive with the students. The teacher needs to ask each student how they can help them. Each student is different, and even if they don't have a disability, students struggle and teachers need to know how to help each student. Keep in touch with student with online classes…it would help if you keep in touch. I have this teacher that keeps sending emails that reminds us about upcoming assignments and asks if we need anything. She actually encourages us not just reminds us. I think they need to help.

Courtney recapped that the lack of faculty interaction causes a lack of learning in online courses stating, "When a student is struggling, I wish they would reach out. If I was having a problem, I wish they would have me visit in their office to discuss what the problem is."

Students with Students.

Unlike the mixed responses to student-to-instructor interactions, all eight participants found dissatisfaction in their peer relations within their online experiences. This group believes instructors set low expectations for student-to-student interaction, which was limited to mostly to weekly discussion board postings and minimal group project work. Students clarifying each other's questions is a very important form of student-to-student interaction in any course, but perhaps more critical in online classes.

Kameron's initial remarks regarding peer interactions, "I have not communicated with other online students yet," highlighted the overall participants' perceptions. For example,

Courtney responded, "there is no interaction of all except we had to be in an online group." Furthering this belief, Courtney stated, "I never email or text in online at all. There isn't any reason to talk to each other…it's the norm for online at least for me." She also noted the importance of having support from friends, "In class I have friends that keep me updated and on track, but online I typically don't have friends in the course that help me." These participants tend not to proactively seek new peer relationships as shown by DeeAnna, "I would email for in-class if I needed help, but it would be someone I knew."

Although scholars have argued that the internet and other digital resources can provide inspiring connections (e.g., Bandura, 1995), this was not the case for the majority of participants in this study. Kameron brings this point to light stating,

> There's not a classroom of students with vast experience, so I'm doing what I think is rights. In-class it's easier to make those bonds, you can share secrets or are you just as lost as me. There are so many website to help students and you can share easier. It's easier to be social, and I consider myself a social person. I enjoy talking to others. The online classes is just you unless you have a buddy that both decided to take the class together. The advantages on in-class is studying together and being more accessible and are a resource.

Heather emphasized, "I didn't have much communication with other students. I didn't need it…it didn't affect me with the lack of other students contact, as long as I can talk to the instructor."

All eight participants utilized Blackboard learning management system to facilitate their online courses, and the major method of peer interactions included the use of the built-in discussion boards. Discussion boards, or threaded discussions, are one of the most commonly used tools in online teaching. Discussion forums provide the ability for asynchronous discussion to occur over a period of time. Though students are more and more confident in their technical abilities for online communication, online faculty must keep in mind that the online experiences of students with learning disabilities have not generally required them to use dialogue as a way to

explore, expand, and elaborate on topics. The participants previous educational experiences are mostly based on lectures and presentations by the instructor, and their online discussion experiences have been superficial.

Due to expectations of participating in all discussions concisely and timely, students may not reflect or elaborate as in-depth as desired by online faculty. The valued concept of self-paced appeared to work against the value of timely discussion boards for these eight participants. The following interview responses capture the value of discussion boards as perceived by the participants in regards to their learning. Keith underscored:

> We did a monthly discussion board that we had to respond to someone else. And I figure what was the minimum I had to write to get a grade. But I never saw it as a means to interact. Besides that there was no other outside interaction with other students.

Zackery explained his difficulties with getting peer feedback:

> My online classes, we have weekly discussion boards over the chapters. So we discuss it, and we have the opportunity to talk about other people's. We talk about our thoughts like you would in in class where people are right beside you. It's hard online because people don't check it or can't check their email. I've gotten better at looking at emails and discussion boards. At first I just turned it in and said forget it.

While Courtney simply stated, "I don't like discussion boards because the instructor is not very vocal about what to do," Laura expressed her lack of enthusiasm for discussion boards.

> There are discussion boards that you go to a lot. You have to type your inputs and then others respond. You have to respond to two to three other people with each discussion. I really don't interact directly in online classes.

Mindy noted her concerns with controversial topics—"I like discussion boards, but they can be confrontational such as spiritual issues. Some are raised differently, but discussion should realize each person has their own opinion so we can learn from each other."

As scholars have found, discussion boards have the potential value of increasing peer participation as long as students with learning disabilities know what to expect to get out of this

type of experience (e.g., Vonderwell, 2003). DeeAnna, a self-identified introvert, embraced the

use of discussion boards.

> She [Instructor] did discussion boards so you gave comments on topics. I actually like that you get to hear other's comments, more like being in a classroom…. In online we used the discussion board, but in class, I wouldn't state my opinion because of my shyness. Discussion boards allowed me to have my opinion.

DeeAnna highlighted how discussion boards are a unique communication tools with the potential

of providing students with learning disabilities with meaningful educational interactions. The

majority of participants, however, described this tool as missing the mark towards creating an

environment of open discussion.

Of the eight participants, Mindy was the sole one to experience and discuss the use of

virtual student working groups. She explained how this learning technique was extremely

beneficial to her and the other online students in regards to group interactions:

> Online I find a little better. Most are group interactions or e-portfolio groups. I think in one online course we were encourage to use the list of all students in Blackboard and use the list of students to do peer reviews…so that broke the ice to communicate with other students. It made me realize I needed that extra help. It was beneficial to realize you need that critic.

and

> We actually work in groups in some modules and you get to meet people that are around you that you don't realize. We would all meet and work on stuff and that was cool. You might work with them until you graduate. You have these classes together and can help each other. And that is what I experienced. I worked with one woman that is in her sixties, and I call her to see what she thinks.

Mindy expressed great satisfaction in her teamwork experiences and highlighted the advantages

gained from this type of peer interactions. She expressed that students with learning will learn

important lessons about communicating clearly, establishing plans and schedules, and

collaborating using virtual working groups.

A more student-focused online class provides multiple opportunities for students to discuss ideas and support a whole class discussion. The online faculty dictate the quality and quantity of the discussion threads through faculty interactions, moderating the discussion threads, structuring discussions in advance, and connecting the discussions to the course objectives. With the obstacles in the academic lives of the participants, the effort and dedication for online instructors to create valued peer interactions is even more critical.

Similar to the traditional classroom set-up, some students required more personal attention from the teacher than other students did. In the case of online learning, such personal interaction is less likely since each student is given the same amount of resources and materials regardless of their learning capacities.

Students with Materials.

One noted method to incorporate active learning in online courses can involve supplemental materials designed by third-party education suppliers. Kameron was the single participant to discuss the advantages of supplemental materials in his experiences with online education.

> We had supplemental online support for psychology course. We had a book companion site, it's really cool. Last semester, you could read the book online with their program. The teacher would set up a link with the access code with quizzes and tests, and we took tests and extra assignments that really helped. I thought all online classes would use these resources but really just did more book work in online classes than regular classes. I wish it would be the other way around. They could be utilizing the online resources better. I don't know what classes have the newest book with the online companions, but if textbooks have these resources, they would be beneficial in an online class…better reinforcement of learning objectives going along with lecture with additional explanation.

Assignments, activities, goals, and assessments implemented within online courses should reinforce active learning—that is, the process through which students actively learn rather than passively absorb the material.

Unfortunately, many online faculty simply provide PowerPoint slides to supplement textbook reading as a substitute for traditional lecture. Zackery, who is in a fully online degree program, confirmed that "Most of my classes, when we study, we study from a PowerPoint." Laura experienced similar faculty attitudes, "Some teachers gave me PowerPoints so I took some notes this semester. But last semester I didn't have PowerPoints and I was just thrown in and told to read chapters 1-3 and take an exam." Kameron also confirmed this common practice, "I definitely study differently. In online classes, teachers give us the PowerPoints as clarification of your reading, I can't do that."

The majority of the participants described their online tests to be limited to evaluating their knowledge level through "true/false or multiple choice" questions. Kameron emphasized that, "In the in-class, the tests aren't like the online tests. Online tests are more textbook centered." The major point of concern with six of the eight participants focused on the lack of direction and lack of understanding on what knowledge would be tested. DeeAnna noted that, "In class has the issue of knowing what was on the test, but online there is a huge amount of information that you have written down." Heather found:

> the tests kind of difficult. On the study guide, he [online instructor] had multiple choice to find in the book. But many times I didn't know where to find it in the books due to problems with reading and information processing. I've always been a bad test taker…I think reading difficulties make it harder.

Laura lamented her concerns with testing in her response to how she prepared differently for online classes and what difficulties she experienced:

> I actually study differently for online because I don't know what will be on the test. So I use index cards and put everything I think might be on the test. I study them every day and then re-read the chapters the day before the test. In class, you typically get study guide that helps you focus on what to study.

and

I didn't know exactly what to study for, they didn't give me a study guide…no nothing; therefore, in a classroom they say this may be on the test, study for this. But in online, they don't tell you what will be on the test. But when it comes to the test, I don't know how to exactly study for the test, so I study from the assignments and the chapters, because they don't give you anything to study from.

Courtney expressed her frustration towards her lack of appreciation for online testing:

I really wish they [online faculty] would do study guides for online classes or at least tell students what to pay attention to. That is what I really struggled with in the online classes. When the instructor tells you to pay attention to the chapters and all the chapters are 30 pages long. If he would have told us what was important, I would have focused better on those topics. Instructors seem to assign a lot of work but don't go into details They should give us some input on what would be on the exams. That is a reason I couldn't get motivated.

Students with learning disabilities are often unaware of the breadth and depth of the material to be covered in an upcoming test, and the lack of communication with the faculty increases their frustration with online tests.

Theme 5: *Instructors Lack Understanding and Support for Students with Learning Disabilities*

Navigating a complicated bureaucracy with far less institutional support than they had in high school, these participants often overcame faculty stigma and ignorance surrounding their learning disabilities, and they had to advocate for themselves. This theme specifically relates to research sub-question 4, thus the subsequent data express how students with learning disabilities perceive what instructors do to better facilitate the students' online learning.

Heather believes support from faculty to be lacking and recommended that the Office Disabilities Services seek feedback from the students registered with their office, in order to initiate a dialog between the student, the instructor, and the Office of Disabilities Services. She noted that students with learning disabilities are already hesitant with asking for accommodations, and how much harder it was in an online course. "I didn't know if I could ask

him for more time or not. I didn't because I didn't want it to seem pushy, extra things he needed

to do." Heather felt that the online instructor should make efforts to ensure he understood the

appropriate accommodations for each student and to communicate with how these agreed upon

accommodations would be implemented.

Similar to Heather, Kameron also stated he assumed the online instructors would reach

out to students with learning disabilities to support their needed accommodations, but discovered

this was not the case.

> I used the online disabilities portal to request accommodations. Each professor gets a
> letter whether online or in class. However, I never got extra time for my tests. I didn't
> think I could have a note taker so I never asked. Because tests are on a timer, the
> professor give us more time than needed, so I never asked for more time or maybe he is
> giving me extra time and the other students have less…I don't really know.

Overall, Kameron revealed his concern with what he believes are instructors providing "limited"

accommodations to students with learning disabilities only out of necessity.

Keith also spotlighted the lack of instructors being proactive towards ensuring students

with learning disabilities have their accommodations. He noted how he presumed that he had to

initiate accommodations, but from his time working closely with the Office of Disability

Services, he believes online instructors could provide better service to their students especially

those with learning disabilities.

> I didn't apply for any additional accommodations, so the teacher didn't put any additional
> time on the tests, and every test I barely finished in the time limit. I could have used the
> extra time on every test. It put a lot of extra stress when you take the test and you don't
> have the accommodation in place. You start worrying about the time versus the questions
> on the test.

DeeAnna's story was consistent with the previous participants. She highlighted herself as

"scared," "embarrassed," "hesitant," and "freaked out" to have to ask for additional help that

others do not receive. She also noted her assumption that the instructor did not know if she needed accommodations.

> There are not really any [online accommodations]. I don't know if I have extra time or not, but I accept what I get. For tests I come down to the wire with time…it will come down to the last few minutes. I haven't ever asked for extra time.

DeeAnna also stated the importance of having a test reader and expressed,

> When it comes to tests, I freak out, and I'll just, like, not understand the questions. But it's easier when someone's reading it to me. For someone to read, I don't have anyone officially, unless I come to the Student Success lab. I use my parents at home to read to me for online courses…I try to use my resources. I don't know if the teacher knows I have help with reading.

Like the other participants, DeeAnna felt accommodations gave her a sense of security to achieve academic success, and the lack of instructor support and understanding diminished this feeling of reassurance.

Zackery's account described his reluctance to use a reader during his online tests. He explained that he was not certain that it was allowed, and no one had advised him otherwise. "In online classes, the extra time and flexibility goes into my favor. However, I'm not a good reader, so sometimes I can't read all of it [test] at one time. It's just, that portion of online is hard." He reiterated his determination to succeed without additional support; however, when asked, his instructors were unaware of his struggles.

Not being diagnosed with her learning disability until enrolled in college in a fully online degree program, Laura initially believed the online instructors would arrange the option of having access to accommodations or special instructions. Additionally, Laura explained how important it was to her that others did not perceive her use of accommodations as a "crutch," and she noted her resistance to inform her instructors of her learning disabilities and her need for accommodations. "I don't always tell my online instructors I need accommodations because I'm

embarrassed…I'm 28, got two kids, and it's just embarrassing." However, she also revealed that many of her online instructors are either uneducated about accommodations for students with learning disabilities or simply disregarded them altogether.

> I don't know if my online teachers know if I am using the reading software. Some teachers ask me what it meant when they got the letter with my accommodations. I'm supposed to have time and half with tests, but I do have one online teacher that only gives me the set time and only five extra minutes.

Laura and Zackery's accounts of their difficulties with accommodations highlight the negative attitudes and lack of awareness faculty are perceived to have toward students with learning disabilities.

Prior to her first online course, Mindy relayed that she felt "a little leery at first, because how is this going to be accommodating, how are they going to accommodate this or that." She also noted that her main concern was her testing accommodations and the lack of knowledge the instructors had with implementing them in Blackboard.

> I was worried about testing accommodations because it is easier to have one question at a time instead of everything at once. Some teachers were hesitant to this because they would have to go in and click a check box but it was pretty simple but they were afraid it would change everyone's.

Heather also shared her sole negative experience of the opposition of her online instructor to her accommodations, and she took action to educate this instructor.

> I've only had the one instance with that teacher not giving me my test accommodations, so I decided to write a paper about accommodations. I found it beneficial, and he found it beneficial. He said it was a good paper. It opened his eyes up about accommodations and he realized how it hindered me. You can educate people behind the scenes.

Heather has a high level of self-efficacy in regards to her online education. Although she has had issues with instructors neglectfully not providing her extended time, she resounded that she has the ability to control her own situation.

There have been teachers that forget to put extended time on your tests, then you'd email them but they don't respond for two days later, then the test may have been due with the two days. This is the issue I brought up with ADA is that if everyone gets a week, and I login and I don't have my extended time for two days, I should get two more extra days. But the teachers don't see it that ways. I have tried to explain it to them but…anyways…I've run into situations like that. I've ran into situations where they have locked me out of tests. The best thing I've found is that I can call Campus Support to have them see if I have the extended time on the tests or if the teacher has set it one question as a time. They then document that I called and it has been recorded. This has helped me get those extra days.

Although Heather has faced multiple occurrences of accommodation issues in her online program, surprisingly she maintains a positive attitude about her online instructors. "Teachers online are more apt to provide you those accommodations."

In summary, this group felt that instructors lack understanding and support of students with learning disabilities, and online instructors need to become more aware of available online accommodations for students with learning disabilities—"like knowing supplemental online materials are available." Accommodations provide a sense of security and even the academic playing field for students with learning disabilities. If these students need to self-advocate for an accommodation, such as a note taker or reader, they are less likely to use it.

This group also felt that online instructors offer no real support except "more test time." For some, however, this was the only accommodation they said they wanted.

Chapter Summary

Eight individuals participated in this study by sharing their educational experiences and journeys, as college students with learning disabilities, through in-depth interviews. This study examines how their journeys and experiences influenced the students' perceptions and feelings as online learners. This chapter introduces each of the study participants with a brief demographic overview and snapshot that provides a window into their lives, motivations, and identities. Additionally, this chapter presents their stories by bringing their experiences to the

foreground and organizes them into five themes. These themes emerged from an analysis of the

qualitative data collected through the series of in-depth interviews with each participant, and it

presents the five central themes, which emerged from the data analysis of interview transcripts.

A section of this chapter is dedicated to each of the following themes:

- students with learning disabilities like the convenience and flexibility of online classes,

- online structure and organization affords students with learning disabilities more time to process and understand information,

- students with learning disabilities feel more independent and confident with the structure and organization of online courses,

- students with learning disabilities perceive a lack of interaction in online classes, and

- instructors lack understanding and support for students with learning disabilities.

This chapter introduces each theme and presents the descriptive narratives representing the lived

experiences of each of the participants. Narratives from the researcher's interpretive assumptions

are interwoven with rich, text quotes from the participants, illustrating their relationship to the

specific theme.

As depicted in the description of the themes, participants expressed both positive and

negative perceptions of online learning. The negative perceptions were due to hesitation prior to

engaging with online education and to difficulties faced in the transition from a traditional

classroom set-up to online learning environment, as well as other negative experiences such as

unavailability of resources, timed tests, and the ambiguity regarding course requirements.

Conversely, the positive perceptions of online education included the importance of

convenience, flexibility, cost-savings, extended time to learn the information, and the ability to

balance job and family commitments with school. Additionally, the challenges experienced in

the online courses such as the lack of communication with the instructor, reduced instructor engagement, minimal peer interactions, and technological difficulties were perceived as learning opportunities for those who had positive experiences, specifically perceiving online learning as a tool for independent learning. Meanwhile those with negative learning experiences perceived these challenges as learning deficiencies. The next chapter contains a summary of the study and a conclusion, as well as implications of the study for practice, future trends, and recommendations.

Chapter 5: Summary, Discussion, and Future Research

This qualitative study explores how postsecondary students with learning disabilities experience online courses. The researcher was interested in discovering how these students described their interactions with online education. The lived experiences of eight students from a regional, public university centrally located in the United States were captured through face-to-face interviews, catalogued into four categories, and then further mapped into five emergent themes.

This final chapter begins with a summary of this study with an overview of the data collection, analysis, and coding directed to answer the research questions. Following this, the results based on the study's findings, the contributions to research, and the implications for practice are discussed. The intent of this research study is to augment the body of knowledge surrounding college students with learning disabilities and the increasing use of online education. This study offers relative insight for researchers, faculty, academic administration, student services professionals, public relations staff, and students with learning disabilities. This chapter concludes with the recommendations for future research, as well as the limitations of the study.

Summary of the Study

Students with learning disabilities are attending college at a higher rate than documented in previous years (DaDeppo, 2009), and accommodations must be made available to these students as required by federal legislation, including Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act of 1990, and the Individuals with Disabilities Improvement Education Act of 2004. Students with learning disabilities enrolled in online courses may not be receiving the accommodations for their academic success. While researchers have studied faculty perspectives and student perspectives on accommodations, the perspectives

of students with learning disabilities taking online education courses have yet to be researched thoroughly. Researchers also have not interviewed this population to determine how online education structure and accommodations they receive contribute to their self-efficacy and social equality leading to academic success.

Minimal research currently exists in the literature related to college students with learning disabilities in online education. Few studies have combined the two areas to determine how these students learn in online education. This study provides a new perspective on online education to fill a substantial gap in the research literature on college students with learning disabilities. This study used a qualitative, phenomenological approach. Phenomenology centers on developing a detailed descriptive analysis of the lived experiences of participants (Creswell, 2012). To participate in this study, participants had to be an undergraduate student enrolled at the university during the time of the study, registered with the Office of Disability Services with a documented learning disability, be at least 18 years of age, and have successfully completed at least one online course and one traditional classroom course.

The Coordinator of Disability Services identified potential participants. She reviewed files and determined if students met the requirements to participate in this study. The Coordinator of Disability Services sent the researcher's email invitation to potential participants. Sixteen potential participants identified themselves as interested in participating, with only eight of the respondents meeting the selection criteria. The non-selected respondents were contacted by email and/or phone to explain their non-selection, as well as noting the researcher's appreciation. In conjunction, the respondents selected to participate in the study were contacted via email and/or phone to set up a time, date, and location for the initial pre-interview.

The pre-interview sessions were more like conversations than formal events in order to allow for adaptability, enable trust, and gain rapport allowing the participants to share information that they might not normally reveal by any other means. During the pre-interview, students completed the consent form and demographic survey which took approximately 30 minutes while the remainder of the hour was spent in relaxed conversation. Concluding the pre-interview, the researcher scheduled the formal interview session.

The second interview session or formal interview consisted of an in-depth follow-up interview. Each interview session lasted approximately one hour, and they were tape-recorded so that they could be transcribed upon completion. To have a better understanding of individual perceptions of online education, the participants were asked open-ended questions regarding their perceptions of the drawbacks and benefits of online learning. The results showed that half of the participants "preferred" traditional classroom courses, while the other half "preferred" online courses. All eight participants described their online learning experience as a good learning option, and the four participants that preferred traditional courses indicated they would take additional online classes if required or to meet their schedule needs. Although several issues were highlighted, the results showed that all eight participants were overall satisfied with their online educational experiences. Once interview transcripts were available, a follow-up meeting was arranged with each participant to conduct the member-checking portion of the study.

Interview transcriptions were then coded by hand, using an open-coding process. The researcher read each transcript, highlighting statements that pertained to the structure of the participants' experience. During the coding process, phrases, paragraphs, and words were grouped into descriptive labels. Some descriptive labels overlapped from one transcript to the next, while other descriptive labels were specific to an individual interview. The descriptive

labels were reviewed again and clustered into categories. The categories were based on descriptive labels that could be collapsed into a single grouping. The categories were then mapped into themes that represent and express the phenomenon of being a college student with a learning disability taking online courses.

In total, five themes emerged from the study. The focus of this study, as well as the main research question, was to determine how students with learning disabilities experience online education. To fully answer this broad question, the researcher developed four sub-questions. The researcher constructed the open-ended interview questions (Appendix F) based on answering these sub-questions, allowing the five themes to emerge. The themes discussed in Chapter 4 answer the four sub-questions, as well as create a picture of the lived experiences of the eight participants.

<div align="center">**Discussion of Results**</div>

Although students with learning disabilities are the largest subgroup of students with disabilities (Orr & Hammig, 2009), as well as the fastest growing subgroup (Brinckerhoff, McGuire, & Shaw, 2002), minimal research exists on college students with learning disabilities, and even less research concerning these students in online education. Chapter 2 presented a foundation of literature for positioning the study within a framework of existing research involving students, faculty, and administration. Empirical studies encapsulating the backgrounds of disabilities and learning disabilities, the in-depth use of online education, the perceptions of online education from multiple viewpoints, and the current state of postsecondary students with learning disabilities utilizing online education now serve as the collective lens for vetting the presented findings. While previous research has not directly explored how students with learning

disabilities experience online education opportunities, the study utilized relative literature to help develop meaning around the themes that emerged.

College students with learning disabilities enrolled in online learning have not previously been researched through a phenomenological lens. This population has had minimal exposure through research, and this phenomenological research study begins to fill the research gap that currently exists. Furthermore, this research adds to the significance of the social model to incorporate mitigating adjustments to online structure for college students with learning disabilities, as well as the importance of self-efficacy to allow these students to be resilient, remain motivated, and accomplish their academic goals.

Online learning can promote collaborative learning opportunities and connections to a diverse student population that may not be possible in a traditional learning environment (Mitchell, 2010). Additionally, online education provides new opportunities for students who may be excluded from attending postsecondary education due to physical limitations, family and career responsibilities, or lack of educational opportunities in the immediate area (Belanger & Jordan, 2000). Furthermore, online courses are becoming increasingly more accepted due to the inherent flexibility of learning "anytime, anywhere" (Nandi, Hamilton, & Harland, 2012). Students with learning disabilities are impacted by online education in different ways than their non-disabled peers. As shown in this dissertation, with online education, instructors and students are physically separated but this does not have to be a barrier to online education for these students any more than it is for the non-disabled students.

As the main research question asks, *how do students with learning disabilities experience online education?* Online classes affect the social and academic satisfaction in numerous ways for college students with learning disabilities in online education. From the participants'

experiences, it was ascertained that online education may suit the needs for accessibility and convenience of working adults. However, it is important to note that the challenge of online courses made some participants in this study more inclined toward traditional classroom education as they found the courses lacking social engagement.

The participants' positive reactions provide an understanding to the growing enrollment in online programs, despite the challenges and limitations of the online method of learning. The benefits offered by online learning contribute to an increase use of online education at postsecondary institutions, the proliferation of institutions that offer online education in a variety of subjects, and the effective marketing of online courses. Several factors lead to the perception of online education as a good learning option including convenience and flexibility in time and location, increased confidence in course completion, and the ability to balance academic and family commitments. On the other hand, the factors that lead to the perception of online education as a negative learning option included hesitation prior to engaging with the online education, the lack of clarity regarding course requirements, and deficiency in faculty engagement and communication.

Benefits of Online Learning

According to Wallhaus (2000), access to online education is not just a popular option, but also necessary for many postsecondary students. The participants' perceived the main benefits in pursuing an online education program as: the convenience and flexibility of online classes to meet family and academic responsibilities (theme 1), more time to process and understand information to allow proper learning and application (theme 2), and the learning environment to provide more independence and confidence while enrolled in online courses (theme 3).

Theme 1.

Although every student should carefully weigh the advantages and considerations of online learning, web-based courses can offer students with learning disabilities some additional benefits, most notably the convenience and flexibility to accommodate individual needs. Studying online provides students with learning disabilities the needed time and space to work. All eight participants significantly indicated that online education provided an opportunity for learning at their own pace and chosen time in contrast to the necessity to commit to the traditional classroom schedule. This was highlighted by Laura, "It seems like I spend more time with online classes for me because I have to comprehend certain things, and I have to keep at it to comprehend." With online learning, they can review materials, read more in depth, and watch videos lectures as many times as they need. For example, through the online learning systems and software, students who have dyslexia or reading processing disorders can manipulate digital text by changing their font style or size that help them in processing the information effectively. DeeAnna noted, "It is so small a print, I'm not sure I'm reading the right lines," but she was able to manipulate her screen size and resolution to aid her reading difficulties.

The participants also strongly preferred the convenience and flexibility of pursuing their education online, which allowed them to study at home and gave them the capability to balance their home and professional responsibilities. Zackery stated, "Online classes…are on your on time and with me working a full-time job and being a full-time student, they are always on your time." Courtney, the participant that appreciated online education the least, noted the benefit of online flexibility, "the advantage is self-paced, and I can finish early." This was a common response from all the other interview participants, an appreciation of the flexibility of schedule and self-pacing afforded by online classes.

143

Another aspect of flexibility and convenience is the accommodation of extended time. The accommodation of extended time appears to be one of the most important accommodations for adults and adolescents in postsecondary education who have specific learning disorders, according to Gregg (2012). All eight participants supported this finding by Gregg (2012). Each participant felt strongly for and requested extended time in their online courses:

- "The only two I ask for is extra test time and one question at a time. Otherwise I try to be more independent" (Mindy)

- "The limited time is hard for me" (Laura)

- "The benefits is I knew I would have extended time on exams" (Courtney)

- "The advantages I probably had are the unlimited amount of time I've had for test, essays, or anything they ask for me to do" (Zackery)

- "I don't like being rushed most of the time. He did have timed assignment, but mostly could do it." (Heather)

- "Even though she gave you in-depth problems, you had time to go find the answer, but in class you didn't have enough time." (DeeAnna)

- "Because tests are on a timer, the professor gives us more time than needed…it is double the time needed." (Kameron)

- "I needed the extra time." (Keith)

However, only one of the eight participants, Courtney, noted negativity with the extra time, "With my learning disability and the extended time, when I'm at home alone, I can go off and lose focus." Courtney was also the only student that noted abusing her accommodation of extended time, "Sometimes I abused it. It just gave me time to cheat. If I got it now I would abuse it. I have tried to learn how to focus within the timeframe."

Students must request accommodations for extended time on assignments and exams in advance, according to university policy, and it is subject to the instructor's discretion about how much extra time will be allowed. As highlighted in this research, students with learning disabilities in online courses are challenged with obtaining their accommodations, communicating with their instructors about their accommodations, and coping with the feelings of frustration when some instructors had forgotten or declined the extended time.

Theme 2.

All eight participants found the structure and organization of online courses beneficial. Specifically, the online structure and organization afforded the participants more time to process and understand information. Mindy offered the simple statement that "it takes students with learning disabilities more time to complete their course work." She and the other participants expressed that online classes often offered students more time to master the course learning objectives.

One reason the eight participants chose online education includes less restrictive timeframes and deadlines to complete assignments and exams. According to McCleary-Jones (2008), students with learning disabilities have difficulty encoding information in short-term memory, which makes it more difficult to retrieve information from long-term memory. Students with learning disabilities often are slow readers and require reading the same material multiple times in order to process and understand. All eight participants detailed their respective appreciation for additional time to understand course content. Heather and Courtney both expressed how they had the appropriate time to "re-read things to comprehend directions" in order to complete their online assignments, while Kameron shared his experience with

misreading directions causing him to complete the wrong assignments. He further explained how he reads aloud so he can "pay attention to detail and follow directions."

The flexibility of online courses has afforded participants more time to process information, as well as more opportunity to gain deeper understanding and application of the learning objections. Mindy highlighted her perceptions of the learning potential of extended time in online versus traditional in-class schedules:

> I really feel like the online allows you to put more effort into the work, therefore your information is more detailed. I didn't feel like that for on campus, I felt everything was rushed. Online you get a lot more time for your classes versus on campus classes, especially if you are taking classes three days a week and taking 12 hours. Not everything is due at the same time, so you have more flexibility to do the work. Online you get more time to work on one setting to learn then move onto next. You have time to sit down and learn something. But in class I don't think I learn as much because I'm bombarded.

Mindy perceived to "do the same amount of work, but it is broken down better in online." She also discussed how the structure of online classes afforded her the time to do the work with her investment of additional time resulting in "retaining more information through online classes than in-class." Zackery echoed his need for additional time to process learning, "Online instructors should have flexibility with us. Don't have a day to write a three page essay…keep it flexible with the schedule." DeeAnna requested "only assign one chapter at a time…having so much, it's hard to understand all this information."

Laura highlighted how online courses allowed her to deal with "the overwhelming reading" by providing the flexibility in the schedule. She also noted that she feels she "studies differently for online" because of the shear amount of information, thus she also feels she "studies harder for online tests." Kameron affirmed these perceptions with his own thoughts:

> I feel like I study more precise with what I study. I definitely study differently. In class studying, teachers give us the PowerPoints or clarification of your reading, I can't do that in online classes. I put more thought into online readings to figure it out.

Having more flexibility in structuring schedules did not lead to less time studying, but actually led to spending more time to overcome their learning disabilities. These participants found that it provided additional convenient time to dedicate to completing coursework.

Another beneficial aspect of the organization and structure of online courses is the use of assistive technologies. Some previous studies (e.g., Seale, 2006) have found that many online students experience difficulties in operating the technology and with the accessibility of the internet when taking online courses. In this study, none of the participants identified or discussed major problems with computer use in navigating through their respective courses. This is consistent with a research study by Kim-Rupnow et al. (2001) which reported no specific difficulties with students with disabilities using technology in online courses.

Kim-Rupnow et al. (2001) analysis of the literature was driven by the question "Do the increase of distance education programs and use of advanced technology indicate better access and better outcomes in higher education for persons with disabilities?" (p. 25). With advancements in assistive technology and the increased student usage of technology, challenges faced by students with learning disabilities can be increasingly eliminated.

Technology affords students a sense of independence and allows multiple opportunities to support reading and aiding processing issues without struggling with comprehension. Those participants who self-identified as having more comfort with technology expressed higher confidence prior to starting online courses; however, the others became much more assured as they learned how technology could assist their learning disabilities. Mindy highlighted this point, "I am better prepared with technology—we use a lot of Microsoft programs you might not use on campus." Keith emphasized his use of technology to equalize his writing abilities:

> I have found technology that will help me with this. I don't type any more. I use my voice recorder. I take my phone, open my notes and speak into it. It knows my voice. I can

write a paragraph or full papers and record it, then drop it into [Microsoft] Word to check spelling, grammar, etc. In a past assignment, I had to write a four-page paper. I went to all the resources and used the recorder, and in an hour a half I was able to write the paper like others are able to do.

Laura underscored her enthusiasm for technology support, "I think what got me excited was when they told me about the Reading software. Because it actually relieved me, so I didn't have to read on my own and try to comprehend." She described how the reading software allowed her to overcome her reading issues:

The best thing using the technologies is my reading software. It actually reads my tests to me, and on my tests, I can highlight it, and it will read whatever I need it to read. When I don't understand a word on it because it is my biggest problem not understanding big words, because it has a dictionary, and I can highlight a word and copy it to the dictionary, and it will tell me what it means.

Keith also was very passionate about using the reading software to support his learning disability in the online course:

I had the reading software accommodation that help me read. We had to read one to three chapters a week and do vocabulary words, and then the test would be over the chapters. The software helped me tremendously to keep up and understand. I had to read every week. I read during the weekends. I used the reading software to read my book on the stereo when I was cleaning the house or doing other things.

Unfortunately, Heather, Courtney, Kameron, Zackery, DeeAnna, and Mindy were unaware of the availability of the reading software; but all had positive experiences with other supportive technologies. Heather discovered "providing visual aids, video, and things that have audio" were extremely beneficial; and Courtney and Kameron discerned the positivity of using "Tegrity videos." Zackery acknowledged similar benefits with technology stating, "The videos and website link are very beneficial because if you don't understand those links can help." DeeAnna's initiative allowed her to "use Google translator to help me as a reader," and Mindy utilized her iPhone revealing, "If I can't pronounce a word or know a definition, I use Siri to pronounce it."

Theme 3.

The more students are engaged in their education, the more likely they will experience independence, empowerment, and self-confidence. The ability to access education through online technology gives students with learning disabilities a greater sense of self-reliance and self-determination because they can take advantage of online support from the comfort of their homes (Dobransky & Hargittai, 2006). When students do not need to rely on others for support, this self-reliance builds their self-efficacy.

Academic self-efficacy refers to one's confidence to perform successfully in academic endeavors. According to Hodges (2008), prior performance has proven to be an important element in students' perceptions of self-efficacy. During the interview sessions, the results expressed that half of the participants "preferred" traditional classroom courses, while the other half "preferred" online courses. The four participants that preferred online expressed more comfort in taking the online courses. Additionally, these four had completed and/or were enrolled in more online classes than the four that preferred traditional classes. Students with learning disabilities who have high confidence with their online capabilities are considered to have a strong sense of self-efficacy. As a result, the level of stress and anxiety is reduced, and the amount of personal accomplishments is enhanced (Bandura, 1995). This is exemplified by Mindy, who had completed 14 online classes and enrolled in four others, as she expressed the highest satisfaction for all aspects of online education as compared to the other participants.

An additional aspect to self-confidence is the ability to feel socially equal to other students. Online courses can be a great educational equalizer, meaning typically no one sees anyone else or knows anything about them other than what participants choose to share. This allows students with learning disabilities to successfully remain anonymous about any disability

they may have if they so choose. During the formal interviews, member checks, and/or informal discussions, all eight participants highlighted the importance of social inclusion and social equality. Zackery focused on this as a benefit by stating, "Not everyone would know about my issues, not call them issues, but no one would know about them." Laura also highlighted the importance of feeling equal, "Online no one else knows, just you and the teacher. In class, everyone knows because of how you're treated." Perhaps self-efficacy for students with learning disabilities is connected to their confidence in feeling that they have some level of choice and control over their own learning in order to achieve success.

Challenges in Online Learning

No doubt, students with learning disabilities may find themselves socially isolated and/or less assured, and this may be even more pronounced for them when participating in online learning. Students with learning disabilities in online degree courses face a variety of challenges ranging from time management, accessing accommodations (theme 5), communicating effectively with peers and instructors (theme 4), to feeling unsure of the material on examinations.

    Theme 4.

According to Moore (1989), there are three kinds of interactions in learning activities: 1) students with instructors, 2) students with students, and 3) students with materials. Teaching styles and interactions between teachers and students play a decisive role in the success of learning. Without considerable interactions between teachers and students, learners are more vulnerable to distractions and difficulty concentrating on the course materials (Isaacs, Morris, Rodriguez, & Tang, 1995). A major challenge with online experiences with the participants was the unavailability of instructors and guidance, with some citing this challenge as "intimidating."

The lack of needed interaction between instructors and students was cited as a difficulty, which had a significant impact on six of the eight participants. These negative responses, noted in Chapter 4, state that there was a lack of or, at best, one-sided communication in online courses. One particularly dissatisfied participant, Courtney, said,

> Only if there is something wrong do I email the instructor. I never went and visited an online instructor in person. My fear was no one was there to get help when I had trouble. I wish they would be more interactive.

Laura reaffirmed this in her statements, "Sometimes the teachers don't get back with you in a timely manner," "Sometimes I have to submit what I can because the teacher doesn't get back to me when I don't understand something," and "Sometimes I won't even email my teacher, because I don't want to seem stupid."

All eight participants also noted the lack peer interactions such as group meetings and class discussions, which are regarded as necessary to promote learning from experiences of other students. This limited the participants' abilities to understand the study material and restricted them from asking questions. Discussion boards have the potential value of increasing peer participation as long as students with learning disabilities know what to expect to get out of this type of experience. However, the experiences of the participants highlight the lack of true interaction and learning that was obtained through the majority of discussion board assignments, as Keith stated, "We did a monthly discussion board that we had to respond to someone else. And I figure what was the minimum I had to write to get a grade."

As supported by the responses from all eight participants, there are other ways besides computer-managed learning and textbook reading to facilitate interaction between students and learning material. Supplemental textbook materials may include activities set by the author or instructors. Other student activities might include watching videos embedded in a learning

management system, conducting a structured approach to finding and analyzing web-based materials, researching a real-world case study to solve a current issue, or downloading and editing information from the web to create e-portfolios of work. These activities should be assessed as evidence suggests (e.g., Means et al., 2010) that students, and in particular students with learning disabilities studying online, tend to focus more on assessed activities. In online courses, the instructor should establish an interactive learning environment by using approaches that engage students to be active in the learning process. The students become responsible for the benefits gleaned from the flexibility of online learning, while the instructors simply provide a platform for interaction.

Theme 5.

According to Lindstrom (2007), one of the most significant barriers facing postsecondary students with learning disabilities is the lack of professional knowledge pertaining to issues surrounding accommodations. Online instructors must have the knowledge about learning disabilities and appropriate accommodations, as well as the willingness to make these students feel comfortable enough interacting with them to allow full disclosure of sensitive personal information. Online instructors must be aware of what accommodations, beyond more testing time, are available to students with learning disabilities, and must be willing to fully incorporate the approved accommodations to ensure their learning disability is not a hindrance.

In regards to instructor support, this study found similar results to Terras et al. (2015). All eight participants indicated that they discovered that not all faculty understood their learning disabilities nor knew the appropriate accommodations to meet the needs presented by their respective learning disabilities. Additionally, all participants substantiated Denhart's (2008) findings that the fear of being characterized as lazy or unmotivated and the stigma of being

152

different, college students with learning disabilities often avoid using their legally mandated accommodations that could ease their workload and improve their chances for academic success.

Receiving the appropriate accommodations is the most important key to success for students with disabilities at the postsecondary level (Burgstahler, 2003). Participants shared multiple examples of difficulty in obtaining the allowable accommodations from instructors, even though they had submitted the required documentation to the Office of Disabilities. The stories supported the research of Chapman (1988), Wolanin and Steele (2004), and Smart (2008) emphasizing the significant barrier of faculty resistance to providing accommodations due to their personal attitudes and beliefs. Courtney reflected upon her difficulties with online instructors reluctant and unwilling to provide her approved accommodations.

> One teacher didn't give me the extended time even when I emailed him about it. The whole extended time was hard…I wasn't given any extra time in the one course. The difference was the one class that I didn't get my extended time…he said "no." Basically he felt I had enough time and I should be fine, but I didn't feel like I had enough time. After the first exam, I just accepted that I didn't get my accommodations.

Keith spotlighted the lack of instructor proactivity towards ensuring students with learning disabilities have their accommodations. He noted his encounter with faculty failing to initiate accommodations,

> …the teacher didn't put any additional time on the tests, and every test I barely finished in the time limit. I could have used the extra time on every test. It put a lot of extra stress when you take the test and you don't have the accommodation in place.

Kameron also noted his experience with faculty not providing his due accommodations, "I used the online disabilities portal to request accommodations. Each professor gets a letter whether online or in class. However, I never got extra time for my tests."

Skinner (2004) noted that self-advocacy was an important factor for student success in those with learning disabilities. Mindy and Laura, the two most experienced online students,

gave examples of how they advocated for themselves as students with learning disabilities in order to access their allowable accommodations and have open communication with their instructors. They experienced that proactive communication with faculty to discuss their learning needs prior to starting each new online course resulted in receiving their needed accommodations.

The overall results of this study indicated the eight participants faced challenges obtaining and utilizing allowable course accommodations, especially extended time on tests. This study spotlights how faculty, especially online faculty, require the knowledge and sensitivity regarding accommodations for these students and their educational needs.

Theoretical Frameworks

This research utilized two theoretical pillars to frame the research: Self-Efficacy theory and Social Model theory. Using Bandura's Self-Efficacy theory in this study framed the investigation on how students with learning disabilities perceive their online education and how it affects their self-efficacy. Utilizing the Social Model approach allowed this study to reflect on how the difficulties and barriers academia imposes on students with learning disabilities may create social injustice and inequality by excluded groups. From this theoretical foundation, findings and patterns are compared to existing literature to examine how college students with learning disabilities experience online education.

Self-Efficacy.

This study indicates that, through interview responses, students with learning disabilities in online courses have a high level of self-efficacy as expressed by Heather, "Something [Online education] that I could do by myself and on my own time," and by Zackery, "don't be afraid to take online classes." Self-efficacy in this research is based on the student perceptions of

themselves. Online students with learning disabilities, although lacking in self-advocacy, had high levels of self-efficacy. Self-efficacy is important because Bandura (1995) proposes that in the face of difficult circumstances, such as students with learning disabilities lacking peer interactions in their online courses, self-efficacy becomes necessary for success. All eight participants noted the lack of peer interaction and the increase self-reliance required to be successful in learning in online courses. Heather stated, "I didn't have much communication with other students. I didn't need it. It didn't affect me with the lack of other students contact."

According to Bandura (1995), seeing other similar students succeed through their sustained efforts raised the participants' beliefs that they too possess the capabilities to succeed. Mindy stated,

> I feel like I have applied myself much more with online classes than I have with my on campus courses. The good thing about that is in online you get a lot more time to for you online classes versus campus.

The flexibility of online classes, as well as the privacy and concealment of their learning disabilities, provided the participants with the perception of equality with their non-disabled peers to learn at their own pace. These factors provided the self-confidence for their success.

Social Model.

Students with learning disabilities are subjected to the same economical, social, and environmental barriers in higher education as students with physical impairments. Students with learning disabilities are often considered as in need of "special assistance", when really they may just not respond to traditional learning techniques. A number of barriers exist which may lead to increased social isolation for individuals with learning disabilities. Utilizing the social model approach allowed this study to reflect on experiences of students with learning disabilities to view the complexities with online education due to their learning differences, as well as the new

opportunities provided to these students who may be excluded from attending postsecondary education. This study, based on the social model of disability, questioned if the processes and structures of the online learning environment adequately accommodate the needs of students with learning disabilities, allowing them proper access to the services, resources, and information needed to fully participate in college education.

For Laura, Zackery, and DeeAnna, online education provided them with the comfort and availability to go to college, and without it, they would not have attended. DeeAnna noted,

> I am not good with people. I have trouble talking with people and am not comfortable with people. With online I didn't have to worry about that. I could stay home and do my own work without worry about anyone else. It is not a phobia, but I'm an introvert.

Zackery expressed how his anxiety keeps him from dealing with the social pressures of traditional classes, "I have issues with my anxiety…, but it kind of lowers it because I'm not around people because I'm free and I could just quit it until I calm down." Study findings suggest that online classes have potential for improving the lives of students with learning disabilities by significantly reducing social barriers in the classroom.

Implications for Practice

Participants in this study felt that the structure and learning environment of online courses provided them a better opportunity to succeed academically. Each participant discussed the value and significance of having the convenience of time and flexibility to learn at their own pace to overcome such learning issues as dyslexia, processing disorders, anxiety, and ability to focus. Additionally, the participants noted that positive relationships with educators were a key factor to their success and motivation. Participants also used technology to overcome their respective disabilities. Lastly, all participants in this study agreed providing accommodations is

the most critical aspect of succeeding in online courses; and extended time on tests and assignments is the most valuable accommodation.

The findings of this study have a number of important implications for future practice and research. This study's findings are particularly important in understanding the types of challenges college students experience with learning disabilities in the course of pursuing their degrees, at least in part, through online courses. The findings and implications from this study move researchers and practitioners toward a deeper understanding of how the experiences of college students with learning disabilities in online education promote or impede the students' social structures, self-efficacy, and academic success. The five themes, which emerged from the thorough analysis of the qualitative data collected, help inform policies and practices for postsecondary online education, and provide a foundation for further research. The results of this study can provide prospective students and educators within higher education a better understanding of the experiences of students with learning disabilities in an online-learning program.

This examination of students with learning disabilities in the online courses offers an insider's view of their experiences, which is important for understanding the benefits and disadvantages of online learning for students with learning disabilities, postsecondary institutions, and higher education. Results of the present study can assist all stakeholders mentioned in this study. This study can assist colleges in creating responsive educational environments and promoting success of students with learning disabilities. Additionally it supports instructors in improving curriculum content and strategies for teaching and learning in online education, thus providing a greater awareness of the factors that motivate these students to pursue a degree through online learning. Moreover, the findings of the current study provide an

opportunity for potential students with learning disabilities to understand the implications of online learning before their actual commitment to enroll in online courses.

Implications for Colleges.

The greatest challenge discussed by participants relates to the responsibility of each college to ensure access to their legally mandated accommodations. The implication of student access to accommodations has potential legal ramifications for colleges if not addressed. To further understand these students, colleges need to determine if they are satisfied with their course accommodations. Specifically, Office of Disability Services should target feedback from students with learning disabilities enrolled in traditional and online courses to determine if faculty have fulfilled the agreed upon accommodations at the midpoint and end of each semester. It is unlikely that an unsatisfied college student with learning disabilities will be retained. Data analysis of this feedback from college students with learning disabilities can provide support to determine initial and ongoing faculty training, promote appropriate support services, incorporate pertinent online technologies to support learning disabilities, and continue efforts to provide social equity through universal design principles.

Additionally, colleges need to address unwillingness of instructors to accommodate students with learning disabilities, especially within online education where faculty-student interactions are limited. This includes improving the lack of knowledge and sensitivity regarding students with learning disabilities among the faculty, staff, administrators, and other students. These students expect to have access to a wide array of disability services, but if students with learning disabilities feel they are not being assisted in the virtual classroom, then improvements must be made. Prentice (2002) recommends training for faculty and staff members in four areas to better serve students with disabilities: 1) creating receptive educational environments, 2)

becoming aware of language, 3) applying the ADA to the entire college setting, and 4)

specifically promoting success of students with disabilities. According to Treloar (1999), this

requires treating students with disabilities as able people and accepting their differences, learning

the appropriate language of disability, recognizing a student who may have a disability and

appropriately modifying teaching and learning conditions, and adopting a student-oriented

education approach to people with disabilities. As highlighted in this study participants felt the

unresponsiveness, the lack of engagement and commitment to learning, the deliberate denial of

accommodations, and the unfairness of expectations to complete assignments and tests in the

time requirements from their respective online instructors. Laura's final recommendation

summed up this point,

> Everybody is different, and I'm going to be a teacher and am learning that. But I think
> that certain disabilities, that disabilities are not the same, and some don't have them but
> still struggle. All kids need help. Teachers need to be interactive with the students. The
> teacher needs to ask each student how they can help them. Each student is different, and
> even if they don't have a disability, students struggle and teachers need to know how to
> help each student. Keep in touch with student with online classes. It would help if you
> keep in touch.

Advocacy and access are two very important factors relate to success of students with learning

disabilities. Faculty advocacy is when a need is identified and adjustments are made to

accommodate that need. Access to accommodations, as stated before, allows students an equal

opportunity to learn. Online faculty have a major role in advocacy and access for students with

learning disabilities.

Implications for Faculty.

The most critical implication falls on the shoulders of online college faculty. Faculty need

to understand the nature and impact learning disabilities have on students. They need to be

actively trained in disability awareness and learn strategies to assist these students. Online

instructors have a responsibility to support all students in their academic endeavors, thus they must become aware of all the resources they have at their disposal to assist students with learning disabilities enrolled in their courses. Furthermore, faculty need to understand the importance of the relationship they develop with these students to support their academic success. It is vital to the success of students with learning disabilities that practical feedback is given to help develop a strong relationship and to motivate the student to succeed. Faculty development that needs to take place includes adequate knowledge of disability laws, federal mandates, court rulings, and amendments made to the laws. The faculty need education regarding accommodations that are available, how the accommodations can help a student with learning disabilities, and how accommodations are determined. Additionally, the faculty should be educated regarding universal design that allows access to all students at the same time. This should include instruction on teaching strategies and research (Dallas et al., 2014).

The eight participants in this study pointed to a need for instructors to develop a better awareness of available resources for students with learning disabilities. This is important to those students with learning disabilities who enroll in online courses. Kameron and Laura mentioned needing transcripts for PowerPoint presentations to be available, and were dismayed that the instructor was unaware this should or could be possible. With the higher workload, which online college instructors have, it may be possible that accommodations for students with learning disabilities are overlooked, especially if the instructor has little or no experience with accommodating students with learning disabilities in online courses. Instructors often assume that all students understand and are experienced taking online courses, but this is not true. This can be overwhelming for any student but especially for students with learning disabilities that

have issues with reading, maintaining focus, and lack confidence. Laura and DeeAnna first noted how "scared" they both were because they did not know "how to do the assignments."

Furthermore, online instructors must make great efforts not to alienate a student with a learning disability who makes a reasonable request. Key concerns to students with learning disabilities include privacy and equality as depicted by Zackery and Keith who chose not to disclose for fear of being stigmatized for reporting their disability. Laura, Courtney, and Mindy shared examples of their experiences where instructors actually refused to implement their accommodations. Courtney noted, "I didn't get my extended time. He just said 'no.' Basically he felt I had enough time and I should be fine." These students have a willingness to try harder than other students may have to, and to stick with it until they achieved their goals. This should be applauded in the college setting, and online instructors should work diligently to promote the spirit of determination displayed by students with learning disabilities.

Finally, the need for increased interaction is not necessarily specific to students with learning disabilities; however, online instructors must be sensitive to the needs of these students. Increased interaction seems crucial for establishing and maintaining a proper learning environment with appropriate faculty-student relations. As Courtney said, "I don't think there is ever really an interaction with instructors in my online course. Only if there is something wrong do I email the instructor." All students need to feel that they can communicate directly with their instructor whenever they need. Given the recent surge in popularity of technology, today's students expect round-the-clock access to instructors. The responses received from the eight interview participants in this research, as depicted in detail in Chapter 4, support the importance of substantial faculty interaction.

Just as troubling as the participants' characterizations of the lack of faculty interaction, the participants highlighted the lack of student-to-student interaction in their online courses. When asked to describe the levels of student-to-student interaction in their online courses, responses ranged from "no interaction," "not much," "none," "don't interact directly," and "really kind of mild" to "monthly discussion boards." Some interview participants were pleased with or accepted the level of interaction, and some plainly were discouraged. Interview questions concerning student-to-student interactions elicited very noteworthy responses as highlighted in Chapter 4. If online courses are meant to maximize the college experience of students with learning disabilities, then the social interactions described earlier must be stressed more. Today's students expect more interaction than a weekly discussion board post and random e-mail responses, and students with learning disabilities especially need more. Courtney highlighted, "I wish they would be more interactive. When a student is struggling, I wish they would reach out. If I was having a problem, I wish they would have me visit in their office to discuss what the problem is."

Recommendations by Participants.

The voices of participants as they made recommendations for online instructors were captured and consolidated. The following list represents the numerous recommendations from all eight participants:

- Make the syllabus available at least a couple weeks before the beginning of class, and be available to discuss it

- Use PowerPoint slides to outline key concepts in the lecture material, terminology, overview of reading material

- Give assignments and directions orally, as well as in writing

- Provide clear deadlines and reminders about due dates

- Provide increased opportunities for student participation and interactions

- Provide study guides and study questions, as well as review sessions to aid in preparing for exams

- Consider untimed exams and alternative means to demonstrate learning with the stigma of time constraints

- Assist in obtaining e-books, supplemental resources, and assistive technologies.

Simply stated, students with learning disabilities in online classes want instructors to express open and constant communication, compassion, a willingness to accommodate students, and faculty engagement.

Limitations

Caution is warranted for readers when making generalizations or conclusions about people beyond the individuals who participated in this study. Further research in this area with a larger sample size and a more diverse sampling pool would be a significant contribution to the literature. This study was conducted at a single mid-size public university in central United States. Eight students participated in the study, of which seven were Caucasian. The sample size and racial composition are not representative of all students with learning disabilities. The students participating in this study self-selected to participate in it. Since these students were willing and eager to participate, they may have a high level of self-efficacy to begin with, which may have limited the results. Additionally, the students in this study had a strong desire to be successful. It is likely that the results would have been different if a random sample of the population was interviewed.

Previous exposure of the researcher as one who is employed at the university may have created some biases and preconceived notions about the study and its findings. Although the researcher worked diligently to move beyond the limitations of these biases and preconceived notions, they may have influenced the study. Another related aspect and possible limitation in this study is that the researcher assumes participants shared their honest, lived experiences, which may not be the case if they were apprehensive, indifferent, or uncomfortable. This is a limitation because participants are the data in this study. If they are not being honest and sharing as much detail as they can, the data are incomplete.

Developing interview questions, interviewing, and performing qualitative coding are procedures that requires skill and experience. The researcher conducting these interviews was a first-time researcher, which is another limitation, because the researcher lacked fully developed skills on conducting research and interviews or analyzing data. It is possible, therefore, that the data were not scrutinized effectively and there may be incorrect reporting of the results.

Future Research

This study lends itself to many future research studies in order to support students with learning disabilities. In the online environment, students with learning disabilities tend to go overlooked and perhaps unacknowledged. As online education becomes increasingly as popular in secondary education as it has become in postsecondary, this research needs to be conducted with this population from elementary school through college. Conducting longitudinal studies with this population would illustrate a clearer picture of the lived experiences of students with learning disabilities utilizing online education.

As cited in the limitations section, a small, non-random sample was obtained for analysis in this research study, which limits the generalizability of the results to other populations. Future

164

research conducted in this area should utilize a larger sample size, and seek to obtain participants from multiple universities and community college campuses across a multi-state area. Additionally, students from each distinct category of learning disabilities warrants to have research specifically devoted to them. Future research should be conducted to address these different categories, to ensure that the voice of every student with a learning disability is heard.

Using a quantitative approach to learn from this population regarding why college students with learning disabilities choose online education could lead to very different results. A quantitative study using a larger group could help quantify the perceived benefits and obstacles, as well as determine the differences in traditional classroom and online courses in regards to success for students with learning disabilities.

An additional area of focus would be to obtain information regarding online faculty attitudes toward students with learning disabilities. Examination of the degree of motivation would be useful to identify the attitudinal barriers among online faculty. It would also be informative to conduct an analysis of online faculty workload and its impact on the time faculty has available to interact with students with disabilities and support their needed accommodations.

As interesting and important as discovering the faculty perspective, it would be intriguing to interview parents of students with learning disabilities enrolled in online education. Since they support their children academically and emotionally, these interviews would provide information on how families support these students, what recommendations they would make to other families, and how families cope in this situation. This would allow college educators and service providers to learn how to assist families of these students and what supports could be put in place to further help students with learning disabilities in online courses. Family was a key

resource and support function for these students, and it would be intriguing to see this situation from the family's perspective.

Conclusion

The overall purpose of this qualitative, phenomenological study is to better understand the lived experiences of college students with learning disabilities accomplishing at least a portion of their education through online courses. This dissertation presents the study in five chapters. The first chapter introduced the study with a broad overview of fields of learning disabilities and of online education. The second chapter presented a descriptive review of literature related to the intersection of students with learning disabilities in higher education and online education, as well as a deeper look at theoretical concepts used to frame this study. The third chapter presented the methodology and research design used for this study by describing the research sites, selection of participants, and the data collection and analysis methods. The fourth chapter introduced the study participants with a general overview of demographics and a vignette of each, and it organized the study findings by themes, which emerged from the data analysis. Finally, the fifth chapter discussed the findings in this study as well as the implications and recommendations for research and practice.

References

Adkins, S. (2011). The US market for self-paced eLearning products and services: 2010-2015 forecast and analysis. *Ambient Insight*.

Al-Asfour, A. (2012). Examining student satisfaction of online statistics courses. *Journal of College Teaching & Learning*, *9*(1), 33-38.

Allen, I. E., & Seaman, J. (2011). *Going the distance: Online education in the United States, 2011*. Newburyport, MA: Sloan Consortium.

Allen, I. E., & Seaman, J. (2013). *Changing Course: Ten Years of Tracking Online Education in the United States*. Newburyport, MA: Sloan Consortium.

Alvesson, M., & Sköldberg, K. (2000). *Reflexive methodology: New vistas for qualitative research.* Thousand Oaks, CA: Sage.

Americans with Disabilities Act of 1990, Pub. L. No 101-336, § 2, 104 Stat. 328 (1991). Retrieved on December 5, 2013 from http://www.usdoj.gov/crt/ada/pubs/ada.htm

Ashburn, E. (2006). Growth fueled by online courses. *Chronicle of Higher Education*, *53*(3), 23-35.

Bacow, L. S., Bowen, W. G., Guthrie, K. M., Lack, K. A., & Long, M. P. (2012). *Barriers to adoption of online learning systems in US higher education*. New York, NY: Ithaka.

Baglione, S. L., & Nastanski, M. (2007). The superiority of online discussion. *Quarterly Review of Distance Education*, *8*(2), 139-150.

Bandura, A. (1995). *Self-efficacy in changing societies*. Cambridge University Press.

Bandura, A., & Adams, N. E. (1977). Analysis of self-efficacy theory of behavioral change. *Cognitive therapy and research*, *1*(4), 287-310.

Barazandeh, G. (2005). Attitudes toward disabilities and reasonable accommodations at the university. *The UCI Undergraduate Research Journal*, *8*(1), 1-11.

Barnard-Brak, L., & Sulak, T. (2010). Online versus face-to-face accommodations among college students with disabilities. *The American Journal of Distance Education*, *24*(2), 81-91.

Baron, J., & Crooks, S. M. (2004). Academic integrity in web based distance education. *TechTrends*, *49*(2), 40-45.

Barry, M., & Runyan, G. B. (1995). A Review of distance-learning studies in the U.S. military. *American Journal of Distance Education*, *9*(3), 37-47.

Bauminger, N., & Kimhi-Kind, I. (2008). Social information processing, security of attachment, and emotion regulation in children with learning disabilities. *Journal of Learning Disabilities, 41*, 315-332.

Bekele, T. A., & Menchaca, M. P. (2008). Research on internet supported learning: A review. *Quarterly Review of Distance Education*, *9*(4), 373-405.

Belanger, F., & Jordan, D. (Eds.). (2000). *Evaluation and implementation of distance learning: Technologies, tools and techniques*. Hershey, PA: Idea Group Publishing.

Belch, H. A. (2004). Retention and students with disabilities. *Journal of College Student Retention: Research, Theory and Practice*, *6*(1), 3-22.

Beldarrain, Y. (2006). Distance education trends: Integrating new technologies to foster student interaction and collaboration. *Distance Education, 27*(2), 139-153.

Bell, B. S., & Federman, J. E. (2013). E-learning in postsecondary education. *The Future of Children*, *23*(1), 165-185.

Bentz, V. M., & Shapiro, J. J. (1998). *Mindful inquiry in social research*. Thousand Oaks, CA: Sage Publications.

Bissonnette, L. (2006*). Meeting the evolving education needs of faculty in providing access for university students with disabilities* (Doctoral dissertation, Concordia University, Montreal). Retrieved from http://files.eric.ed.gov/fulltext/EJ1002144.pdf

Blakeley, J., & Curran-Smith, J. (1998). Teaching community health nursing by distance methods: development, process, and evaluation. *Journal of Continuing Education in Nursing*, *29*(4), 148-153.

Boyd, C. O. (2001). Phenomenology the method. In P. L. Munhall (Ed.), *Nursing research: A qualitative perspective* (3rd. ed., pp. 93-122). Sudbury, MA: Jones and Bartlett.

Brinckerhoff, L. C., McGuire, J. M., & Shaw, S. F. (2002). *Postsecondary education and transition for students with learning disabilities* (2nd ed.). Austin, TX: Pro-Ed.

Bryan, T., Burstein, K., & Ergul, C. (2004). The social-emotional side of learning disabilities: A science-based presentation of the state of the art. *Learning Disability Quarterly*, *27*(1), 45-51.

Bryant, A., & Charmaz, K. (Eds.). (2007). *The Sage handbook of grounded theory*. London: Sage Publications.

Burgstahler, S. (2002). Distance learning: Universal design, universal access. *Educational Technology Review*, *10*(1), 32-61.

Burgstahler, S. (2003). Accommodating students with disabilities: Professional development needs of faculty. In C. M. Wehlburg, & S. Chadwick-Blossey, (Eds.) *To Improve the Academy, 21*, pp. 179-195.

Burgstahler, S. (2006). The development of accessibility indicators for distance learning programs. *Association for Learning Technology Journal, 14*(1), 79-102.

Burgstahler, S. (2009). Real connections: Making distance learning accessible to everyone. Retrieved from http://www.washington.edu/doit/Brochures/PDF/distance.learn.pdf

Burgstahler, S. (2015). Opening doors or slamming them shut? Online learning practices and students with disabilities. *Social Inclusion*, *3*(6), 69-79.

Burgstahler, S., Corrigan, B., & McCarter, J. (2004). Making distance learning courses accessible to students and instructors with disabilities: A case study. *Internet and Higher Education, 7*, 233-246.

Case, D. E., & Davidson, R. C. (2011). Accessible online learning. *New Directions for Student Services*, *2011*(134), 47-58.

Catalano, A. (2014). Improving distance education for students with special needs: A qualitative study of students' experiences with an online library research course. *Journal of Library & Information Services in Distance Learning*, *8*(1-2), 17-31.

Cavanaugh, C. S. (2001). The effectiveness of interactive distance education technologies in K-12 learning: A meta-analysis. *International Journal of Educational Telecommunications*, *7*(1), 73-88.

Cawthon, S. W., & Cole, E. V. (2010). Postsecondary students who have a learning disability: Student perspectives on accommodations access and obstacles. *Journal of Postsecondary Education and Disability*, *23*(2), 112-128.

Center for Applied Special Technology (CAST) (2010). *What is universal design for learning?* [Online Publication]. Retrieved from http://www.cast.org/udl/index.html

Center for Universal Design (1997). *Environments and products for all people.* [Online Publication]. Retrieved from http://www.design.ncsuedu/cud/univ_design/ud.htm

Center for Universal Design (2008). *About UD*. [Online Publication]. Retrieved from http://www.ncsu.edu/ncsu/design/cud/about_ud/about_ud.htm

Chan, Z. C., Fung, Y. L., & Chien, W. T. (2013). Bracketing in phenomenology: Only undertaken in the data collection and analysis process? *The Qualitative Report*, *18*(30), 1-9.

Chapman, J. W. (1988). Learning disabled children's self-concepts. *Review of educational research*, *58*(3), 347-371.

Charters, E. (2003). The use of think-aloud methods in qualitative research: An introduction to think-aloud methods. *Brock Education Journal*, *12*(2), 68-82.

Cintrón, R., Dillon, C., & Boyd, T. (2001). Teaching and learning in the new information age: State-system policies for technology. *Community colleges: Policy in the future context*, 229-239.

Coldwell, J., & Wells, J. (2003). Students' perspective of online learning. In Davies, G., & Stacey, E. (Eds.), *Quality education@ a distance* (pp. 101-108). New York, NY: Springer US.

Cole, B. S., & Cain, M. W. (1996). Social work students with disabilities: A proactive approach to accommodation. *Journal of Social Work Education, 32*, 339-349.

Conley, D. (2007). *Toward a more comprehensive conception of college readiness*. Eugene, OR: Educational Policy Improvement Center. Retrieved from http://www.s4s.org/upload/Gates-college%20Readiness.pdf

Connor, D. J. (2013). Sink or swim: Managing the academic transition to college for students with learning disabilities. *Journal of College Student Retention: Research, Theory and Practice, 15*(2), 269-292.

Cook, B. G., Gerber, M. M., & Murphy, J. (2000). Backlash against the inclusion of students with learning disabilities in higher education: Implications for transition from post-secondary environments to work. *Work, 14*(1), 31-40.

Coombs, N. (2010). *Making online teaching accessible: Inclusive course design for students' with disabilities*. San Francisco, CA: Jossey-Bass.

Corley, M. A., & Taymans, J. (2002). Adults with learning disabilities: A review of the literature. *Annual review of adult learning and literacy*, *3*, 44-83.

Cornett-DeVito, M. M., & Worley, D. W. (2005). A front row seat: A phenomenological investigation of learning disabilities. *Communication Education, 54*(4), 312-333.

Courtad, C. A., & Bakken, J. P. (2011). History of learning disabilities. *History of special education*, *21*, 61-87.

Cragg, C. B., Andrusyszyn, M. A., & Fraser, J. (2005). Sources of support for women taking professional programs by distance education. *Journal of Distance Education*, *20*(1), 21-38.

Creswell, J. W. (1998). *Qualitative inquiry and research design: Choosing among five traditions*. Thousand Oaks, CA: Sage Publications.

Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five approaches* (2nd ed.). Thousand Oaks, CA: Sage Publications.

Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4th ed.), Boston, MA: Pearson.

Creswell, J. W., & Clark, V. L. P. (2007). *Designing and conducting mixed methods research*. Thousand Oaks, CA: Sage Publications.

Creswell, J. W., & Miller, D. L. (2000). Determining validity in qualitative inquiry. *Theory into Practice*, *39*(3), 124-130.

Crow, K. L. (2006). *Accommodating on-line postsecondary students who have disabilities*. Northern Illinois University.

Cuellar, N. (2002). The transition from classroom to online teaching. *Nursing Forum, 37*(3), 5-13.

DaDeppo, L. M. (2009). Integration factors related to the academic success and intent to persist of college students with learning disabilities. *Learning Disabilities Research & Practice, 24*(3), 122-131.

Dallas, B. K., Upton, T. D., & Sprong, M. E. (2014). Post-secondary faculty attitudes toward inclusive teaching strategies. *Journal of Rehabilitation*, *80*(2), 12-20.

Daniels, C., & Feather, S. R. (2002). Student perceptions of online learning: A comparison of two different populations. In *Proceedings of the Conference on Information Systems Applied Research, USA*.

Darrington, A. (2008). Six lessons in e-learning: Strategies and support for teachers new to online environments. *Teaching English in the Two Year College, 35*(4), 416-421.

Denhart, H. (2008). Perceptions of students labeled with learning disabilities in higher education. *Journal of Learning Disabilities, 41*(6), 483- 497.

Denscombe, M. (2014). *The good research guide: For small-scale social research projects*. McGraw-Hill Education (UK).

Disability Compliance for Higher Education (2013). Help ensure online course content is accessible to students with disabilities. *Disability Compliance for Higher Education, 19*(4), 1-16.

Disability Funders Network (2012). *Disability stats and facts*. [Online Publication]. Retrieved from http://www.disabilityfunders.org/disability-stats-and-facts

Dobbs, R. R., Waid, C. A., & del Carmen, A. (2009). Students' perceptions of online courses. *Quarterly Review of Distance Education*, *10*(1), 9-26.

Dobransky, K., & Hargittai, E. (2006). The disability divide in internet access and use. *Information, Communication & Society, 9*(3), 313-334.

Driscoll, A., Jicha, K., Hunt, A., Tichavsky, L., & Thompson, G. (2012). Can online courses deliver in-class results? A comparison of student performance and satisfaction in an

online versus a face-to-face introductory sociology course. *Teaching Sociology, 40*, 312-331.

Dukes, L. L., Waring, S. M., & Koorland, M. A. (2006). The blended course delivery method: The not-so-distant education. *International Society for Technology in Education, 22*(4), 153-158.

Dunlap, J. C., Sobel, D., & Sands, D. I. (2007). Supporting students' cognitive processing in online courses: Designing for deep and meaningful student-to-content interactions. *TechTrends, 51*(4), 20-31.

Edmonds, C. D. (2004). Providing access to students with disabilities in online distance education: Legal and technical concerns for higher education. *American Journal of Distance Education, 18*(1), 51-62.

Edmundson, M. (2012). The trouble with online education. *The New York Times*, *19*. Retrieved from http://schoolnova.com/classes/s2013/englishB/englishB-2013-01-06-file1.pdf

Elliott, S. N., & Marquart, A. M. (2004). Extended time as a testing accommodation: Its effects and perceived consequences. *Exceptional Children*, *70*(3), 349-367.

Ellis, R. K. (2009). *Field guide to learning management systems*. Alexandria, VA: ASTD Learning Circuits.

Elvers, G. C., Polzella, D. J., & Graetz, K. (2003). Procrastination in online courses: Performance and attitudinal differences. *Teaching of Psychology, 30*, 159-162.

Epper, R. M. (1997). Coordination and competition in postsecondary distance education: A comparative case study of statewide policies. *Journal of Higher Education, 65*(5), 551-587.

Erickson, W., Trerise, S., VanLooy, S., Lee, C., & Bruyere, S. (2009). Web accessibility policies and practices at American community colleges. *Community College Journal of Research Practice, 33*(5), 403-414.

Fichten, C. S., Asuncion, J., & Scapin, R. (2014). Digital technology, learning, and postsecondary students with disabilities: Where we've been and where we're going. *Journal of Postsecondary Education and Disability*, *27*(4), 369-379.

Fichten, C. S., Ferraro, V., Asuncion, J. V., Chwojka, C., Barile, M., Nguyen, M. N., Klomp, R. & Wolforth, J. (2009). Disabilities and e-Learning problems and solutions: An exploratory study. *Educational Technology & Society*, *12*(4), 241-256.

Fish, W. W., & Wickersham, L. E. (2009). Best practices for online instructors: Reminders. *Quarterly Review of Distance Education, 10*(3), 279-284.

Fletcher, J. M., Lyon, G. R., Barnes, M., Stuebing, K. K., Francis, D.J., Olson, R.K., Shaywitz, S. E., & Shaywitz, B. A. (2002). Classification of learning disabilities: An evidenced-based evaluation. In Bradley R., Danielson L., & Hallahan D. (Eds.), *Identification of*

learning disabilities: Research to practice (pp. 185-250). Mahwah, NJ: Lawrence Erlbaum.

Fonosch, G. G., & Schwab, L. O. (1981). Attitudes of Selected University Faculty Members toward Disabled Students. *Journal of College Student Personnel*, *22*(3), 229-235.

Fontaine, G. (2002). Presence in "Teleland." In Rudestam, K. E., & Schoenholtz-Read, J. (Eds.), *Handbook of online learning: Innovations in higher education and corporate training* (pp. 21-52). Thousand Oaks, CA: Sage.

Frels, R. K., & Onwuegbuzie, A. J. (2012). Interviewing the interpretive researcher: An impressionist tale. *Qualitative Report, 17*(60), 1-27.

Friedman, M. G., & Bryen, D. N. (2007). Web accessibility design recommendations for people with cognitive disabilities. *Technology and Disability, 19*(4), 205-212.

Frimming, R. E., & Bordelon, T. D. (2016). Physical education students' perceptions of the effectiveness of their distance education courses. *Physical Educator*, *73*(2), 340-351.

Fuchs, D., Mock, D., Morgan, P. L., & Young, C. L. (2003). Responsiveness-to-intervention: Definitions, evidence, and implications for the learning disabilities construct. *Learning Disabilities Research & Practice, 18*(3), 157-171.

Gallien, T., & Oomen-Early, J. (2008). Personalized versus collective instructor feedback in the online classroom: Does type of feedback affect student satisfaction, academic performance and perceived connectedness with the instructor? *International Journal on ELearning, 7*(3), 463-476.

Gartin, B. C., Rumrill, P., & Serebreni, R. (1996). The higher education transition model: Guidelines for facilitating college transition among college-bound students with disabilities. *Teaching Exceptional Children*, *29*(1), 30-33.

Gladhart, M. A. (2010). Determining faculty needs for delivering accessible electronically delivered instruction in higher education. *Journal of Postsecondary Education and Disability*, *22*(3), 185-196.

Gordon, D. I., & Kundra, V. (2010). Memorandum for chief acquisition officers and chief information officers: Improving the accessibility of government information. Retrieved from https://www.whitehouse.gov/sites/default/files/omb/assets/procurement_memo/improving_accessibility_gov_info_07192010.pdf

Graham, S., & English, R. (2001). Requesting academic accommodations. *CHADD Attention*. Retrieved from http://www.ldonline.org/article/Requesting_Academic_Accommodations? theme=print

Graham-Smith, S., & Lafayette, S. (2004). Quality disability support for promoting belonging and academic success within the college community. *College Student Journal*, *38*(1), 90-99.

Gredler, M. & Shields, C. (2008). *Vygotsky's legacy: A foundation for research and practice.* New York, NY: Guildford Press.

Green, K. (2010). Faculty training is a major investment for online education programs: ADA compliance remains a major vulnerability. *Managing Online Education*, 1-2. Retrieved from http://www.campuscomputing.net/2010-managing-online-education

Gregg, N. (2012). Increasing access to learning for the adult basic education learner with learning disabilities: Evidence-based accommodation research. *Journal of Learning Disabilities*, *45*(1), 47-63.

Gregg, N., Coleman, C., Davis, M., Lindstrom, W., & Hartwig, J. (2006). Critical issues for the diagnosis of learning disabilities in the adult population. *Psychology in the Schools, 43*(8), 889-898.

Grimes, E. B. (2002). Student perceptions of an online dental terminology course. *Journal of Dental Education*, *66*(1), 100-107.

Groenewald, T. (2004). A phenomenological research design illustrated. *International journal of qualitative methods*, *3*(1), 42-55.

Grosse, C. U. (2004). How distance learning changes faculty. *International Journal of Instructional Technology and Distance Learning*, *1*(6), 25-34.

Guba, E. G. (1981). Criteria for assessing the trustworthiness of naturalistic inquiries. *Educational Communication and Technology Journal*, *29*(2), 75-91.

Habib, L., Berget, G., Sandnes, F. E., Sanderson, N., Kahn, P., Fagernes, S., & Olcay, A. (2012). Dyslexic students in higher education and virtual learning environments: an exploratory study. *Journal of Computer Assisted Learning*, *28*(6), 574-584.

Hadley, W. M. (2007). The necessity of academic accommodations for first-year college students with learning disabilities. *Journal of College Admission*, *195*, 9-13.

Hallahan, D. P., & Mercer, C. D. (2002). Learning disabilities: Historical perspectives. *Identification of learning disabilities: Research to practice*, 1-67.

Hallahan, D. P., & Mock, D. R. (2003). A brief history of the field of learning disabilities. In H. L. Swanson, K. R. Harris, & S. Graham (Eds.), *Handbook of learning disabilities* (pp.16-29). New York, NY: The Guilford Press.

Hamill, C., & Sinclair, H. (2010). Bracketing-practical considerations in Husserlian phenomenological research. *Nurse Researcher, 17*, 16-24.

Hammill, D. D. (1990). On defining learning disabilities: An emerging consensus. *Journal of Learning Disabilities*, 23, 74-84.

Hannay, M., & Newvine, T. (2006). Perceptions of distance learning: A comparison of online and traditional learning. *Journal of Online Learning and Teaching*, *2*(1), 1-11.

Hara, N., & Kling, R. (2000). A case study of students' frustrations with a Web-based distance education course. *Information Communication and Society, 3*(4), 557-579.

Hartman-Hall, H. M., & Haaga, D. A. (2002). College students' willingness to seek help for their learning disabilities. *Learning Disability Quarterly,* 263-274.

Hasselbring, T. S., & Glaser, C. H. W. (2000). Use of computer technology to help students with special needs. *The Future of Children*, *10*(2), 102-122.

Heiman, T. (2008). Females with learning disabilities taking on-line courses: Perceptions of the learning environment, coping and well-being. *Journal of Postsecondary Education and Disability, 21*(1), 4-13.

Heiman, T., & Kariv, D. (2004). Manifestations of learning disabilities in university students: Implications for coping and adjustment. *Education*, *125*(2), 313-325.

Heiman, T., & Precel, K. (2003). Students with learning disabilities in higher education: Academic strategies profile. *Journal of Learning Disabilities*, *36*(3), 248-258.

Heiman, T., & Shemesh, D. O. (2012). Students with LD in higher education use and contribution of assistive technology and website courses and their correlation to students' hope and well-being. *Journal of Learning Disabilities*, *45*(4), 308-318.

Henderson, K. (2000). Overview of ADA, IDEA, and section 504. Retrieved from http://www.kidsource.com/kidsource/content3/ada.idea.html

Heward, W. (2006). *Exceptional children: An introduction to special education* (8th ed.). Columbus, OH: Merril/Prentice-Hall.

Heyer, K. (2007). A disability lens on sociolegal research: Reading rights of inclusion from a disability studies perspective. *Law & Social Inquiry, 32*(1), 261-293.

Higher Education Opportunity (HEO) Act, Pub. L. No. 110–315, 14 August 2008.

Hodges, C. B. (2008). Self-efficacy in the context of online learning environments: A review of the literature and directions for research. *Performance Improvement Quarterly*, *20*(3-4), 7-25.

Hollins, N., & Foley, A. R. (2013). The experiences of students with learning disabilities in a higher education virtual campus. *Educational Technology Research and Development*, *61*(4), 607-624.

Hughes, C. A., & Smith, J. O. (1990). Cognitive and academic performance of college students with learning disabilities: A synthesis of the literature. *Learning Disability Quarterly, 13*(1), 66-79.

Husserl, E. (1931). *Ideas: General introduction to pure phenomenology* (W. R. Boyce Gibson, Trans.). London: George Allen & Unwin.

Husserl, E. (1970). *Logical Investigation* (Vols. 1 - 2) (J. N. Findlay, Trans.). New York, NY: Humanities Press.

Individuals with Disabilities Education Act (IDEA) of 2004, Pub. L. 108-446.

Isaacs, E. A., Morris, T., Rodriguez, T. K., & Tang, J. C. (1995). A comparison of face-to-face and distributed presentations. In R. R.

Katz, R. Mack, L. Marks, M. B. Rosson, & J. Nelson (Eds.), *Proceedings of the association for computing machinery (ACM) special interest group on computers and human interaction (CHI) 95 conference* (pp. 354–361). New York: ACM Press.

Jick, T. D. (1979). Mixing qualitative and quantitative methods: Triangulation in action. *Administrative Science Quarterly, 24*, 602-611.

Jimenez, J. E., del Rosario Ortiz, M., Rodrigo, M., Hernandez-Valle, I., Ramirez, G., Estevez, A., O'Shanahan, I., & de la Luz Trabaue, M. (2003). Do the effects of computer-assisted practice differ for children with reading disabilities with and without IQ—Achievement discrepancy? *Journal of Learning Disabilities*, *36*(1), 34-47.

Johnsrud, L. K., Harada, V. H., & Tabata, L. (2006). The university of Hawai'i and distance education: The critical role of faculty. *Hawaii Educational Policy Center*. Retrieved from www.hawaii.edu/hepc/pdf/Briefs/TechFacultyAttitudeAdoption.pdf

Jones, D. R. (2011). Academic dishonesty: Are more students cheating? *Business Communication Quarterly*, *74*(2), 141-150.

Joyce, D., & Rossen, E. (2006). Transitioning high school students with learning disabilities into postsecondary education: Assessment and accommodations. *Communiqué*, *35*(3), 39-43.

Kaufman, R. (1998). The Internet as the ultimate technology and panacea. *Educational Technology, 58*(1), 63-64.

Keegan, D. (1995). *Distance education technology for the new millennium: Compressed video teaching.* ZIFF Papiere. Hagen, Germany: Institute for Research into Distance Education.

Keengwe, J., & Kidd, T. T. (2010). Towards best practices in online learning and teaching in higher education. *MERLOT Journal of Online Learning and Teaching*, *6*(2), 533-541.

Kelly, R. (2000). Working with WebQuest. *Teaching Exceptional Children*, *32*(6), 4-13.

Kim-Rupnow, W. S., Dowrick, P. W., & Burke, L. S. (2001). Implications for improving access and outcomes for individuals with disabilities in postsecondary distance education. *American Journal of Distance Education*, *15*(1), 25-40.

Kinash, S., Crichton, S., & Kim-Rupnow, W. S. (2004). A review of 2000-2003 literature at the intersection of online learning and disability. *American Journal of Distance Education*, *18*(1), 5-19.

King, C. G., Guyette, R. W., & Piotrowski, C. (2009). Online exams and cheating: An empirical analysis of business students' views. *The Journal of Educators Online*, *6*(1), 1-11.

King, F. B., Young, M. F., Drivere-Richmond, K., & Schrader, P. G. (2001). Defining distance learning and distance education. *AACE journal*, *9*(1), 1-14.

Klemes, J., Epstein, A., Zuker, M., Grinberg, N., & Ilovitch, T. (2006). An assistive computerized learning environment for distance learning students with learning disabilities. *Open Learning*, *21*(1), 19-32.

Ko, S., & Rossen, S. (2010). *Teaching online: A practical guide* (3rd ed.). Boston: Houghton.

Kyle, R., & Festervand, T. A. (2005). An update on the high-tech MBA. *Journal of Education for Business*, *80*(4), 240-244.

Lanier, M. M. (2006). Academic integrity and distance learning. *Journal of Criminal Justice Education*, *17*(2), 244-261.

Lao, T., & Gonzales, C. (2005). Understanding online learning through a qualitative description of professors and students' experiences. *Journal of Technology and Teacher Education*, *13*(3), 459-474.

LaPointe, L., & Reisetter, M. (2008). Belonging online: Students' perceptions of the value and efficacy of an online learning community. *International Journal on ELearning, 7*(4), 641-665.

Lazar, J., Dudley-Sponaugle, A., & Greenidge, K. D. (2004). Improving web accessibility: a study of webmaster perceptions. *Computers in Human Behavior, 20*(2), 269-288.

Lazar, J., & Jaeger, P. (2011). Reducing barriers to online access for people with disabilities. *Issues in Science and Technology*, *27*(2), 69-82.

Lewis, C. C., & Abdul-Hamid, H. (2006). Implementing effective online teaching practices: Voices of exemplary faculty. *Innovative Higher Education*, *31*(2), 83-98.

Lewis, L., Farris, E., & Greene, B. (1999). *An institutional perspective on students with disabilities in postsecondary education*. Washington, DC: US Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics.

Lim, D. H. (2002). Perceived differences between classroom and distance education: Seeking instructional strategies for learning applications. *International Journal of Educational Technology*, *3*(1), 20-32.

Lim, D. H., & Morris, M. L. (2004). Fixed versus flexible learning: Differences in learning, application, and instructional perception. In *Proceedings of the 2004 Academy of Human Resource Development Annual Conference* (Vol. 1060, p. 1066).

Lim, D. H., Morris, M. L., & Kupritz, V. W. (2014). Online vs. blended learning: Differences in instructional outcomes and learner satisfaction. *Journal of Asynchronous Learning Networks, 11*(2), 27-42.

Lin, C. S. (2013). Revealing the "Essence" of things: Using phenomenology in LIS research. *Qualitative and Quantitative Methods in Libraries (QQML), 4,* 469-478.

Lincoln, Y. S. & Guba, E. G. (1985). *Naturalistic inquiry.* Beverly Hills, CA: Sage Publications.

Lindstrom, J. (2007). Determining appropriate accommodations for postsecondary students with reading and writing expression disorders. *Learning Disabilities Research & Practice, 22*(4), 229-236.

Lock, R. H., & Layton, C. A. (2001). Succeeding in postsecondary education through self-advocacy. *Teaching Exceptional Children*, *34*(2), 66-71.

Löfström, E., & Nevgi, A. (2007). From strategic planning to meaningful learning: Diverse perspectives on the development of web-based teaching and learning in higher education. *British Journal of Educational Technology*, *38*(2), 312-324.

Loh, J. (2013). Inquiry into issues of trustworthiness and quality in narrative studies: A perspective. *The Qualitative Report, 18*, 1-15.

Lyon, G. R., Fletcher, J. M., Shaywitz, S. E., Shaywitz, B. A., Torgesen, J. K., Wood, F. B., Schulte A., & Olson, R. (2001). Rethinking learning disabilities. *Rethinking special education for a new century*, 259-287.

Madaus, J. (2011). The history of disability services in higher education. *New Directions for Higher Education, 2011*(154), 5-15.

Madaus, J. W., Banerjee, M., McKeown, K., & Gelbar, N. (2012). Online and blended learning experience: Differences for students with and without learning disabilities and attention deficit/hyperactivity disorder. *International Journal of Research in Learning Disabilities, 1*(1), 21-36.

Madaus, J., Kowitt, J., & Lalor, A. (2012). The higher education opportunity act: Impact on students with disabilities. *Rehabilitation Research, Policy, and Education, 26*(1), 33-41.

Madaus, J. W., & Shaw, S. (2004). Section 504: Differences in the regulations for secondary and postsecondary education. *Intervention in School and Clinic, 40*(2), 81-87.

Maguire, L. (2009). The faculty perspective regarding their role in distance education policy making. *Online Journal of Distance Learning Administration*, *12*(1). Retrieved from http://www.westga.edu/~distance/ojdla/spring121/maguire121.html

Maki, R. H., Maki, W. S., Patterson, M., & Whittaker, P. D. (2000). Evaluation of a Web-based introductory psychology course: I. Learning and satisfaction in on-line versus lecture courses. *Behavior research methods, instruments, & computers*, *32*(2), 230-239.

Marinakou, E. (2013). An investigation of factors that contribute to student satisfaction from online courses: The example of an online accounting course. *US-China Education Review, 4*(8), 536-547.

Marshall, C., & Rossman, G. B. (2014). *Designing qualitative research*. Beverly Hills, CA: Sage Publications.

Mastin, D. F., Peszka, J., & Lilly, D. R. (2009). Online academic integrity. *Teaching of Psychology*, *36*(3), 174-178.

Mathison, S. (1988). Why triangulate? *Educational Researcher*, *17*(2), 13-17.

Maxwell, J. A. (2012). *Qualitative research design: An interactive approach*. Thousand Oaks, CA: Sage Publications.

McCleary-Jones, V. (2007). Learning disabilities in the community college and the role of disability services departments. *Journal of Cultural Diversity, 14*(1), 43-47.

McCleary-Jones, V. (2008). Students with learning disabilities in the community college: Their goals, issues, challenges and successes. *The ABNF Journal, 19*(1), 14-21.

McGhee, G., Marland, G. R., & Atkinson, J. M. (2007). Grounded theory research: Literature reviewing and reflexivity. *Journal of Advanced Nursing, 60*(3), 334-342.

McGinnis, M. (2010). John Tracy Clinic/University of San Diego graduate program: A distance learning model. *The Volta Review*, *110*(2), 261-270.

McInnerney, J. M., & Roberts, T. S. (2004). Online learning: Social interaction and the creation of a sense of community. *Educational Technology & Society*, *7*(3), 73-81.

Means, B., Toyama, Y., Murphy, R., Bakia, M., & Jones, K. (2010). *Evaluation of evidence-based practices in online learning: A meta-analysis and review of online learning studies*. Washington, D.C.: U.S. Department of Education, Office of Planning, Evaluation, and Policy Development.

Merriam, S. B. (1998). *Qualitative research and case study applications in education*. San Francisco, CA: Jossey-Bass.

Merriam, S. B. (2009). *Qualitative research: A guide to design and implementation: Revised and expanded from qualitative research and case study applications in education*. San Francisco, CA: Jossey-Bass.

Merrill, H. S. (2003). Best practices for online facilitation. *Adult Learning*, *14*(2), 13-16.

Meyer, K. A. (2006). Cost-efficiencies of online learning. *ASHE Higher Education Report Series, 32*(1). San Francisco, CA: Jossey-Bass.

Miles, M. B., & Huberman, A. M. (1984). *Qualitative data analysis*. Beverly Hills, CA: Sage Publications.

Miller, T. W., & King, F. B. (2003). Distance education: Pedagogy and best practices in the new millennium. *International Journal of Leadership Education, 6*(3), 283-297.

Milsom, A., & Dietz, L. (2009). Defining college readiness for students with learning disabilities: A Delphi study. *Professional School Counseling, 1*(4), 315-323.

Mitchell, R. (2010). Approaching common ground: Defining quality in online education. *New Directions for Community Colleges, 150*, 89-94.

Mitra, S. (2006). The capability approach and disability. *Journal of Disability Policy Studies*, *16*(4), 236-247.

Moisey, S. D. (2004). Students with disabilities in distance education: Characteristics, course enrollment and completion, and support services. *Journal of Distance Education, 19*(1), 73-91.

Moore, M. G. (1989). Three types of interaction. *The American Journal of Distance Education, 3*(2), 1-6.

Morse, J. M. (1994). *Critical issues in qualitative research methods*. Thousand Oaks, CA: Sage.

Mortagy, Y., & Boghikian-Whitby, S. (2010). A longitudinal comparative study of student perceptions in online education. *Interdisciplinary Journal of E-Learning and Learning Objects*, *6*(1), 23-44.

Mott, N. (2003). Transition services for first semester freshmen with learning disabilities. Retrieved on August 1, 2016 from http://www.newfoundations.com/CurrProjects/Mott.html

Motteram, G., & Forrester, G. (2005). Becoming an online distance learner: What can be learned from students' experiences of induction to distance programmes? *Distance Education*, *26*(3), 281-298.

Moustakas, C. (1994). *Phenomenological research methods*. Thousand Oaks, CA: Sage.

Muilenburg, L. Y., & Berge, Z. L. (2005). Student barriers to online learning: A factor analytic study. *Distance education*, *26*(1), 29-48.

Mull, C. A., & Sitlington, P. L. (2003). The role of technology in the transition to postsecondary education of students with learning disabilities: A review of the literature. *The Journal of Special Education*, *37*(1), 26-32.

Muller, L. (2006, November). Research collaboration with learning-disabled students. *Journal of College Science Teaching, 36*(3)*, 26-29.

Murphy, K. L., & Collins, M. P. (1997). Communication conventions in instructional electronic chats. *Journal of Distance Education, 12*(1), 177-200.

Murray, C., Goldstein, D. E., Nourse, S., & Edgar, E. (2000). The postsecondary school attendance and completion rates of high school graduates with learning disabilities. *Learning Disabilities Research & Practice, 15*(3), 119-127.

Murray, C., Lombardi, A., Wren, C. T., & Keys, C. (2009). Associations between prior disability-focused training and disability-related attitudes and perceptions among university faculty. *Learning Disability Quarterly*, *32*(2), 87-100.

Murray, C., Wren, C. T., & Keys, C. (2008). University faculty perceptions of students with learning disabilities: Correlates and group differences. *Learning Disability Quarterly, 31*(3), 95-113.

Musick, K. (2001). Distance education: Promoting access and equity for adult learners with disabilities. *Rehabilitation Education, 15*(1), 63‑77.

Myhill, W. N., Samant, D., Klein, D., Kaplan, S., Reina, M. V., & Blanck, P. (2007). Distance education initiatives and their early 21st century role in the lives of people with disabilities. In E. P. Bailey (Ed.), *Focus on distance education developments* (pp. 1-38). Hauppauge, NY: Nova Science.

Nandi, D., Hamilton, M., & Harland, J. (2012). Evaluating the quality of interaction in asynchronous discussion forums in fully online courses. *Distance Education*, *33*(1), 5-30.

Nathaniel, A. K. (2006). Moral reckoning in nursing. *Western Journal of Nursing Research, 28*(4), 419-438.

National Center for Learning Disabilities. (2007). Dyscalculia. Retrieved from: http://www.ldonline.org/article/Dyscalculia

National Center for Learning Disabilities. (2011). The state of learning disabilities. Retrieved from https://www.gradnation.org/sites/default/files/The%20State%20of%20Learning%20Disabilities.pdf

National Institute of Neurological Disorders and Stroke. (NINDS) (2009). NINDS dysgraphia information page. National Institutes of Health. Retrieved from: http://www.ninds.nih.gov/disorders/dysgraphia/dysgraphia.htm

National Institute of Neurological Disorders and Stroke (NINDS) (2010). NINDS dyslexia information page. National Institutes of Health. Retrieved from: http://www.ninds.nih.gov/disorders/dyslexia/dyslexia.htm

Neuhauser, C. (2002). Learning style and effectiveness of online and face-to-face instruction. *American Journal of Distance Education*, *16*(2), 99-113.

Office of Civil Rights (2013). Frequently asked questions about Section 504 and the education of children with disabilities. Retrieved on May 13, 2014 from http://www2.ed.gov/about/offices/list/ocr/504faq.html

Oliver, M. (1990). *The politics of disablement: Critical texts in social work and the welfare state*. London: Mac-Millan.

Oliver, M. (1996). *Understanding disability: From theory to practice*. New York, NY: St Martin's Press.

O'Malley, J., & McCraw, H. (1999). Students' perceptions of distance learning, online learning and the traditional classroom. *Online journal of distance learning administration*, *2*(4). Retrieved from: http://www.westga.edu/~distance/omalley24.html

Opitz, C. (2002). Online course accessibility: A call for responsibility and necessity. *AACE Journal, 10* (1), 81-105.

Orr, A. C., & Hammig, S. (2009). Inclusive postsecondary strategies for teaching students with learning disabilities: A review of the literature. *Learning Disability Quarterly*, *32*(3), 181-196.

Padgett, D. K. (1998) *Qualitative methods in social work research: Challenges and rewards*. Thousand Oaks, CA: Sage.

Paechter, M., & Maier, B. (2010). Online or face-to-face? Students' experiences and preferences in e-learning. *The Internet and Higher Education*, *13*(4), 292-297.

Parker, D. R., & Banerjee, M. (2007). Leveling the digital playing field assessing the learning technology needs of college-bound students with LD and/or ADHD. *Assessment for Effective Intervention*, *33*(1), 5-14.

Patrick, S., & Powell, A. (2009). *A summary of research on the effectiveness of K-12 online learning*. International Association for K-12 Online Learning. Retrieved from http://search.proquest.com/docview/742873152?accountid=15150

Patton, M. Q. (1999). Enhancing the quality and credibility of qualitative analysis. *Health Services Research*, *34* (5 Pt 2), 1189-1208.

Patton, M. Q. (2002). *Qualitative research and evaluation methods*. Thousand Oaks, CA: Sage Publications.

Patton, M. Q. (2015). *Qualitative research and evaluation methods: Integrating theory and practice* (4th ed.)*. Thousand Oaks, CA: Sage Publications.

Perrucci, V., Balboni, G., & Cacciamani, S. (2008). Sense of community in online courses and students with disabilities: Development of a questionnaire for university students. A*dvances in Learning and Behavioral Disabilities*, *21*, 209-222.

Petrides, L. A. (2002). Web-based technologies for distributed (or distance) learning: Creating learning-centered educational experiences in the higher education classroom. *International Journal of Instructional Media*, *29*(1), 69-77.

Phillips, A., Terras, K., Swinney, L., & Schneweis, C. (2012). Online disability accommodations: Faculty experiences at one public university. *Journal of Postsecondary Education and Disability*, *25*(4), 331-344.

Polkinghorne, D. E. (1989). Phenomenological research methods. In Valle, R. S., & Halling, S. (Eds.), *Existential-phenomenological perspectives in psychology* (pp. 41-60). New York, NY: Springer US.

Poole, D. M. (2000). Student participation in a discussion-oriented online course: A case study. *Journal of research on computing in education*, *33*(2), 162-177.

Poore-Pariseau, C. (2010). Online learning: Designing for all users. *The Journal of Usability Studies, 5*(4), 147-156.

Prentice, M., & ERIC Clearinghouse for Community Colleges. (2002). *Serving students with disabilities at the community college*. Los Angeles, CA: ERIC Clearinghouse for Community Colleges.

Quitadamo, I., & Brown, A. (2001*). Effective teaching styles and instructional design for online learning environments* (Report No. IR021100).

Raskind, M. H., Margalit, M., & Higgins, E. L. (2006). "My LD": Children's voices on the internet. *Learning Disability Quarterly*, *29*(4), 253-268.

Rehabilitation Act of 1973, Section 508. 29 U.S. C. § 794d.

Rehabilitation Act of 1973 as amended, 1998, Section 504. 29 U.S. C. § 794(a).

Reisetter, M., & Boris, G. (2004). What works: Student perceptions of effective elements in online learning. *Quarterly Review of Distance Education, 5*(4), 277-291.

Richards, J. T., & Hanson, V. L. (2004). Web accessibility: A broader view. In *Proceedings of the 13th international conference on World Wide Web* (pp. 72-79). New York, NY: ACM Press.

Richardson, J. T. (2010). Course completion and attainment in disabled students taking courses with the Open University UK. *Open Learning*, *25*(2), 81-94.

Rivera, J., & Rice, M. (2002). A comparison of student outcomes and satisfaction between traditional and web based course offerings. *Online Journal of Distance Learning Administration*, *5*(3), 1-10.

Roberts, J., & Crittenden, L. (2009). Accessible distance education 101. *Research in Higher Education Journal*, *4*, 1-12.

Roberts, J., Crittenden, L., & Crittenden, J. (2011). Students with disabilities and online learning: A cross-institutional study of perceived satisfaction with accessibility compliances and services. *Internet and Higher Education, 14*(4), 242-250.

Roschelle, J., & Pea, R. (1999). Trajectories from today's WWW to a powerful educational infrastructure. *Educational Researcher*, *28*(5), 22-43.

Rose, D. H., Hasselbring, T. S., Stahl, S., & Zabala, J. (2005). Assistive technology and universal design for learning: Two sides of the same coin. *Handbook of Special Education Technology Research and Practice*, 507-518.

Rothstein, L. F. (1997). *Disabilities and the law* (2nd ed.). Danvers, MA: West Group.

Rowland, C. (2004). Cognitive disabilities part 2: Conceptualizing design considerations. Retrieved from http://webaim.org/articles/cognitive/conceptualize/

Rumrill, P. D. (1994). The "win-win" approach to Title I of the Americans with Disabilities Act: Preparing college students with disabilities for career-entry placements after graduation. *Journal of Postsecondary Education and Disability*, *11*(1), 15-19.

Russell, C. K., & Gregory, D. M. (2003). Evaluation of qualitative research studies. *Evidence Based Nursing*, *6*(2), 36-40.

Ryan, J. (2007). Learning disabilities in Australian universities hidden, ignored, and unwelcome. *Journal of Learning Disabilities*, *40*(5), 436-442.

Salmen, J. (2011). Universal design for academic facilities. *New Directions for Student Services, 2011*(134)*,* 21-33.

Samaha, A. M. (2007). What good is the social model of disability? *The University of Chicago Law Review*, 1251-1308.

Sampson, H. (2004). Navigating the waves: the usefulness of a pilot in qualitative research. *Qualitative Research*, *4*(3), 383-402.

Sampson, P. M., Leonard, J., Ballenger, J. W., & Coleman, C. (2010). Student satisfaction of online courses for educational leadership. *Online Journal of Distance Learning Administration*, *13*(3). Retrieved from http://www.westga.edu/~distance/ojdla/Fall133/sampson_ballenger133.html

Sandelowski, M. (1993). Rigor or rigor mortis: The problem of rigor in qualitative research revisited. *Advances in Nursing Science, 16*(3), 1-8.

Schmetzke, A. (2001). Online distance education—"anytime, anywhere" but not for everyone. *Information technology and disabilities*, *7*(2), 1-23.

Scott, S. S. (1996). Understanding colleges: An overview of college support services and programs available to clients from transition planning through graduation. *Journal of Vocational Rehabilitation*, *6*(3), 217-230.

Seale, J. K. (2006). A contextualized model of accessible e-learning practice in higher education institutions. *Australasian Journal of Educational Technology*, *22*(2), 268-288.

Seale, J. K. (2013). *E-learning and disability in higher education: Accessibility research and practice*. Oxford: Routledge.

Secomb, J. M., & Smith, C. (2011). A mixed method pilot study: The researcher's experiences. *Contemporary Nurse, 39*(1), 31-35.

Seidman, I. (1998). *Interviewing as qualitative research: A guide for researchers in education and social sciences.* New York, NY: Teachers College Press.

Shachar, M., & Neumann, Y. (2003). Differences between traditional and distance education academic performances: A meta-analytic approach. *The International Review of Research in Open and Distance Learning*, *4*(2), 1-20.

Shachar, M., & Neumann, Y. (2010). Twenty years of research on the academic performance differences between traditional and distance learning: Summative meta-analysis and trend examination. *MERLOT Journal of Online Learning and Teaching*, *6*(2), 318-334.

Shaw, R. (2011). Employing universal design for instruction. *New Directions for Student Services, 2011*(134), 21-33.

Shea, P. (2007). Bridges and barriers to teaching online college courses: A study of experienced online faculty in thirty-six colleges. *Journal of Asynchronous Learning Networks*, *11*(2), 73-128.

Shea, P., & Bidjerano, T. (2014). Does online learning impede degree completion? A national study of community college students. *Computers & Education*, *75*(2)*,* 103-111.

Silc, K. F. (1998). *Using the World Wide Web with adult ESL learners*. ERIC Digest. Washington, DC: ERIC Clearinghouse on Literacy Education.

Sileo, J. M., & Sileo, T. W. (2008). Academic dishonesty and online classes: A rural education perspective. *Rural Special Education Quarterly*, *27*(1/2), 55-60.

Simoncelli, A., & Hinson, J. M. (2008). College students' with learning disabilities personal reactions to online learning. *Journal of College Reading & Learning*, *38*(2), 49-62.

Simoncelli, A., & Hinson, J. (2010). Designing online instruction for postsecondary students with learning disabilities. *Journal of Educational Multimedia and Hypermedia*, *19*(2), 211-220.

Skinner, M. E. (2004). College students with learning disabilities speak out: What it takes to be successful in postsecondary education. *Journal of Postsecondary Education and Disability, 17*(2), 91-104.

Skinner, M. E. (2007). Faculty willingness to provide accommodations and course alternatives to postsecondary students with learning disabilities. *International Journal of Special Education*, *22*(2), 32-45.

Sitzmann, T., Kraiger, K., Stewart, D., & Wisher, R. (2006). The comparative effectiveness of web-based and classroom instruction: A meta-analysis. *Personnel Psychology*, *59*(3), 623-664.

Slatin, J. (2002). The imagination gap: Making Web-based instructional resources accessible to students and colleagues with disabilities. *Currents in Electronic Literacy, 6.* Retrieved from http://currents.dwrl.utexas.edu/spring02/slatin.html

Smart, J. F. (2008). *Disability, society, and the individual*. (2nd ed.). Austin, TX: Pro Ed.

Smart, K. L., & Cappel, J. J. (2006). Students' perceptions of online learning: A comparative study. *Journal of Information Technology Education*, *5*(1), 201-219.

Smith, C. R. (2004). *Learning disabilities: The interaction of students and their environments,* (5th ed.). Boston, MA: Pearson Education, Inc.

Sniatecki, J. L., Perry, H. B., & Snell, L. H. (2015). Faculty attitudes and knowledge regarding college students with disabilities. *Journal of Postsecondary Education and Disability*, *28*(3), 259-275.

Snyder, T. D., & Dillow, S. A. (2011). *Digest of education statistics 2010* (NCES 2011-015). Washington, DC: US Department of Education, Institute of Education Sciences. *National Center for Education Statistics.* Retrieved from http://nces.ed.gov/pubs2011/2011015.pdf

Snyder, T. D., & Dillow, S. A. (2012). *Digest of education statistics 2011*. Washington, DC: National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education.

Song, L., Singleton, E. S., Hill, J. R., & Koh, M. H. (2004). Improving online learning: Student perceptions of useful and challenging characteristics. *The internet and higher education*, *7*(1), 59-70.

Sparks, R. L., & Lovett, B. J. (2009). College students with learning disability diagnoses who are they and how do they perform? *Journal of Learning Disabilities, 42*(6), 494-510.

Standen, P. J., Brown, D. J., & Cromby, J. J. (2001). The effective use of virtual environments in the education and rehabilitation of students with intellectual disabilities. *British Journal of Educational Technology*, *32*(3), 289-299.

Stake, R. E. (2010). *Qualitative research: Studying how things work*. New York, NY: Guilford Press.

Stewart, B. L., Waight, C. L., Norwood, M. M., & Ezell, S. D. (2004). Formative and summative evaluation of online courses. *Quarterly Review of Distance Education*, *5*(2), 101-109.

Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory.* Thousand Oaks, CA: Sage.

Stodel, E. J., Thompson, T. L., & MacDonald, C. J. (2006). Learners' perspectives on what is missing from online learning: Interpretations through the community of inquiry

framework. *The International Review of Research in Open and Distributed Learning*, *7*(3). Retrieved from http://www.irrodl.org/index.php/irrodl/article/view/325/743

Streubert, H. J., & Carpenter, D. R. (1999). *Qualitative research in nursing: Advancing the humanistic imperative*. New York, NY: Lippincott.

Sturman, A. (1997). Case study methods. In Keeves, J. P. (Ed.). *Educational research, methodology and measurement: an international handbook* (2nd ed.) (pp. 61-66). Oxford, UK: Pergamon Press.

Swan, K. (2003). Learning effectiveness: What the research tells us. In J. Bourne & J. C. Moore (Eds.), *Elements of quality online education: Practice and direction* (pp. 13-45). Needham, MA: Sloan Center for OnLine Education.

Sweener, K., Kundert, D., May, D., & Quinn, K. (2002). Comfort with accommodations at the community college level. *Journal of Developmental Education, 25*(3), 12-18.

Symeonides, R., & Childs, C. (2015). The personal experience of online learning: An interpretative phenomenological analysis. *Computers in Human Behavior*, *51*, 539-545.

Tandy, C., & Meachum, M. (2009). Removing the barriers for students with disabilities: Accessible online and web enhanced courses. *Journal of Teaching in Social Work, 29*, 313‑328.

Tanner, J. R., Noser, T. C., & Totaro, M. W. (2009). Business faculty and undergraduate students' perceptions of online learning: a comparative study. *Journal of Information Systems Education, 20*(1), 29-40.

Taymans, J., & West, L. (2001). *Selecting a college for students with learning disabilities or attention deficit hyperactivity disorder (ADHD)*. Retrieved from http://www.hoagiesgifted.org/eric/e620.html

Terras, K., Leggio, J., & Phillips, A. (2015). Disability accommodations in online courses: The graduate student experience. *Journal of Postsecondary Education and Disability*, *28*(3), 329-340.

The Center for Universal Design (1997). *The principles of universal design, version 2.0*. Raleigh, NC: North Carolina State University.

Thompson, A. R., Bethea, L., & Turner, J. (1997). Faculty knowledge of disability laws in higher education: A survey. *Rehabilitation Counseling Bulletin*, *40*(3), 166-180.

Treloar, L. L. (1999). Editor's choice: Lessons on disability and the rights of students. *Community College Review, 27*(1), 30-40.

Troiano, P. F., Liefeld, J. A., & Trachtenberg, J. V. (2010). Academic support and college success for postsecondary students with learning disabilities. *Journal of College Reading and Learning, 40*(2), 35-44.

United Nations (2006). *United Nations global audit of Web accessibility*. London: Nomensa.

U.S. Census Bureau News (2010). 20th Anniversary of Americans with Disabilities Act: July 26. [Online Publication]. Retrieved from http://www.census.gov/ newsroom/releases/pdf/ cb10ff-13.pdf

U. S. Department of Justice and the U. S. Department of Education (2010). *Joint "dear colleague": Electronic book readers.* Retrieved from http://www2.ed.gov/about/offices/list/ocr/docs/504-qa-20100629.html

U.S. Government Accountability Office (2009). GAO Report 10-33. *Higher education and disability: Education needs a coordinate approach to improve its assistance to schools in supporting* students. Retrieved from http://www.gao.gov/new.items/d1033.pdf

van Manen, M. (1990). *Researching lived experience*. New York, NY: SUNY Press.

Veal, W., Bray, M., & Flowers, C. (2005). Developing an online accessible science course for all learners. *Contemporary Issues in Technology and Teacher Education, 5*(3/4), 271-289.

Vincent, T. (1995). Information technology and disabled students. In Lockwood, F. (Ed.), *Open and distance learning today,* (pp. 87-97). New York, NY: Routledge.

Vogel, S. A., Leyser, Y., Wyland, S., & Brulle, A. (1999). Students with learning disabilities in higher education: Faculty attitude and practices. *Learning Disabilities Research & Practice*, *14*(3), 173-186.

Vonderwell, S. (2003). An examination of asynchronous communication experiences and perspectives of students in an online course: A case study. *The Internet and higher education*, *6*(1), 77-90.

Wall, C., Glenn, S., Mitchinson, S., & Poole, H. (2004). Using a reflective diary to develop bracketing skills during a phenomenological investigation. *Nurse Researcher*, *11*(4), 20-29.

Wallhaus, R. A. (2000). E-learning: From institutions to providers, from students to learners. In R.N. Katz, & D.G. Oblinger (Eds.), *The "E" is for everything: Ecommerce, E-business, and E-learning in the future of higher education. EDUCAUSE leadership strategies, No. 2*, (pp. 21-52). San Francisco: Josey-Bass.

Wentz, B., Jaeger, P. T., & Lazar, J. (2011). Retrofitting accessibility: The legal inequality of after-the-fact online access for persons with disabilities in the United States. *First Monday*, *16*(11). Retrieved from http://firstmonday.org/ojs/index.php/fm/article/view/3666/3077

Wickersham, L. E., & McElhany, J. A. (2010). Bridging the divide: Reconciling administrator and faculty concerns regarding online education. *Quarterly Review of Distance Education*, *11*(1), 1-12.

Wimberly, L., Reed, N., & Morris, M. (2004). Postsecondary students with learning disabilities: Barriers to accessing education-based information technology. *Information Technology and Disabilities E-Journal*, *10*(1), 1-40.

Wolanin, T. R., & Steele, P. E. (2004). *Higher education opportunities for students with disabilities: A primer for policymakers*. Washington, DC: The Institute for Higher Education Policy.

Wyatt, G. (2003). Satisfaction, academic rigor and interaction: Perceptions of online instruction. *Education, 125*(3), 460-468.

Yang, Y., & Cornelius, L. F. (2004). Students' perceptions towards the quality of online education: A qualitative approach. *Association for Educational Communications and Technology, 2*(7), 861-877.

Yang, Y., & Cornelious, D. (2005). Preparing instructors for quality online instruction. *Online Journal of Distance Learning Administration*, *8*(1), 1-17.

Yin, R. K. (2003). *Case study research: Design and methods* (3rd ed.). Thousand Oaks, CA: Sage.

Yocom, D. J., & Coll, K. M. (1995). Community college students with learning disabilities: A national survey of perceptions and procedures. *Community College Journal of Research and Practice*, *19*(6), 571-581.

Young, A., & Norgard, C. (2006). Assessing the quality of online courses from the students' perspective. *The Internet and Higher Education*, *9*(2), 107-115.

Yu, H. (2002). Web accessibility and the law: Recommendations for implementation. *Library Hi Tech, 20*(4), 406-419.

Zhang, Y., & Wildemuth, B. M. (2009). Qualitative analysis of content. *Applications of social research methods to questions in information and library science*, 308-319.

Zsohar, H., & Smith, J. A. (2008). Transition from the classroom to the web: Successful strategies for teaching online. *Nursing Education Perspectives, 29*(1), 23-28.

Appendix A: IRB Approvals

Murders, Michael Ray

From:	Tiffany Henry
Sent:	Friday, December 16, 2016 11:18 AM
To:	Murders, Michael Ray
Cc:	Jack Tucci
Subject:	IRB Approved
Attachments:	SKM_22716121612060.pdf

Mr. Murders,

Your IRB application is approved and given approval code Murders_121616. It expires on 12/16/19.

Thank you,

Tiffany

From: ospuicopier@atu.edu [mailto:ospuicopier@atu.edu]
Sent: Friday, December 16, 2016 12:08 PM
To: Tiffany Henry <thenry1@atu.edu>
Subject: Message from KM_227

1

UNIVERSITY OF ARKANSAS

Office of Research Compliance
Institutional Review Board

February 2, 2017

MEMORANDUM

TO:	Michael Murders Michael Stephen Hevel
FROM:	Ro Windwalker IRB Coordinator
RE:	New Protocol Approval
IRB Protocol #:	16-12-359
Protocol Title:	*A Phenomenological Study of the Online Education Experiences of College Students with Learning Disabilities*
Review Type:	☒ EXEMPT ☐ EXPEDITED ☐ FULL IRB
Approved Project Period:	Start Date: 02/02/2017 Expiration Date: 02/01/2018

Your protocol has been approved by the IRB. Protocols are approved for a maximum period of one year. If you wish to continue the project past the approved project period (see above), you must submit a request, using the form *Continuing Review for IRB Approved Projects*, prior to the expiration date. This form is available from the IRB Coordinator or on the Research Compliance website (https://vpred.uark.edu/units/rscp/index.php). As a courtesy, you will be sent a reminder two months in advance of that date. However, failure to receive a reminder does not negate your obligation to make the request in sufficient time for review and approval. Federal regulations prohibit retroactive approval of continuation. Failure to receive approval to continue the project prior to the expiration date will result in Termination of the protocol approval. The IRB Coordinator can give you guidance on submission times.

This protocol has been approved for 10 participants. If you wish to make *any* modifications in the approved protocol, including enrolling more than this number, you must seek approval *prior to* implementing those changes. All modifications should be requested in writing (email is acceptable) and must provide sufficient detail to assess the impact of the change.

If you have questions or need any assistance from the IRB, please contact me at 109 MLKG Building, 5-2208, or irb@uark.edu.

Appendix B: Recruitment Announcement

> You are invited to participate in a study specifically for college students who have been diagnosed with a learning disability

Purpose of Study

The purpose of this study is to better understand the perceptions and experiences of students, like you, who have been diagnosed with a learning disability.

- I hope to gain new insights into how you and other students perceive your experience taking online classes
- I also hope provide research that could lead to improving the ability to design and implement online courses that meet the needs of students with learning disabilities

You are being asked to take part in this study because you are currently enrolled in college, have been self-identified with the Disability Services Office as having a learning disability, and have successfully completed at least one online course. You should not participate if you are under the age of 18.

What will I be asked to do?

You will be asked to voluntarily take part in two separate one-on-one interviews with me that will last approximately 45-60 minutes each. These are informal interviews and scheduled at a time and place that is convenient for you.

- **First Interview**: Participants are asked to complete a brief questionnaire for demographic data. Then, we will discuss your background, your learning disability, and how it impacts you.
- **Second Interview**: You will be asked to reflect on your perceptions and experiences as a college student taking online courses. You will be asked to reflect on your decision to take an online class, any decisions to take more online, and any decisions to not elect to take another online class.

Who to contact if I would like to participate or have questions?

Michael Murders

mmurders2@atu.edu
mmurders@uark.edu

I'm a doctoral student at University of Arkansas conducting this study as part of my dissertation. I also work at ATU-Ozark as the Chief Academic Officer

Informed Consent Form
Arkansas Tech University

Title of Project: *A Phenomenological Study of the Online Education Experiences of College Students with Learning Disabilities*

Principal Investigator: Michael R. Murders

Faculty Advisor: Dr. Michael Hevel

We invite you to take part in a research study of postsecondary students with learning disabilities enrolled in online courses at Arkansas Tech University (ATU), which seeks to identify and explore the perceptions of postsecondary students with learning disabilities enrolled in online education. Taking part in this study is entirely voluntary. We urge you to discuss any questions about this study with our staff members. Talk to your family and friends about it and take your time to make your decision. If you decide to participate, you must sign this form to show that you want to take part.

I. PURPOSE OF THIS RESEARCH/PROJECT

You are being asked to participate in a research study designed to explore the experiences and attitudes of college students with learning disabilities participating in online college courses at ATU.

II. PROCEDURES

After signing this consent form, you will be asked to participate in two (2) separate interview/observation sessions (around 1 hour each). These sessions will include answering questions about your learning disability, your previous educational experiences, and your online education experience at ATU.

III. Time Duration of the Procedures and Study

If you agree to take part in this study, your involvement will include two separate sessions that last around one hour each for a total time of two hours.

IV. Discomforts and Risks

There is minimal risk involved in participating in this study. The possible discomfort that you may experience is similar to feelings one is subjected to when completing other questionnaires or interviews. Safeguards to minimizing your discomfort will be that you are free to withdraw your participation at any time without any negative consequence.

V. BENEFITS

You will not directly benefit from taking part in this research study. However, your participation in the study will provide valuable information that may guide future improvements of online education for students with and without learning disabilities.

VI. EXTENT OF ANONYMITY AND CONFIDENTIALITY

The results of this study will be kept strictly confidential. The information you provide will have your name removed and only a subject number will identify you during analyses. Your name will never be associated with this data. Furthermore, the interviews and observations will be taped with a recorder, and the recordings will be reviewed by Michael Murders and destroyed after complete analysis has been conducted. Your research records that are reviewed, stored, and analyzed at ATU will be kept in a secured area in the primary investigator's home.

In the event of any publication or presentation resulting from the research, no personally identifiable information will be shared.

VII. COMPENSATION

No promise or guarantee of benefits has been made to encourage your participation.

VIII. RESEARCH FUNDING

The institution and investigators are NOT receiving any funding or grants for this research study.

IX. VOLUNTARY PARTICIPATION

Taking part in this research study is voluntary. You do not have to participate in this research. If you choose to take part, you have the right to stop at any time. If you decide not to participate or if you decide to stop taking part in the research at a later date, there will be no penalty or loss of benefits to which you are otherwise entitled.

X. Contact Information for Questions or Concerns

You have the right to ask any questions you may have about this research. If you have questions, complaints or concerns, contact Michael R. Murders at 479-209-2103 or via email at mmurders2@atu.edu. Additionally, you may contact the primary investigator's Faculty Advisor, Dr. Michael Hevel, at 479-575-4924 or via email at hevel@uark.edu.

If you have questions regarding your rights as a research participant or you have concerns or general questions about the research, contact the chair of the ATU IRB, Dr. Jack Tucci, at (479) 968-0608 or via email at jtucci@atu.edu. You may also call this number if you cannot reach the research team or wish to talk to someone else. For more information about participation in a research study and about the Institutional Review Board (IRB), a group of people who review the research to protect your rights, please visit Arkansas Tech University's IRB web site at http://www.atu.edu/research/human_subjects.php.

X. SUBJECT'S PERMISSION

Before making the decision regarding enrollment in this research you have:

- Discussed this study with an investigator,

- Reviewed the information in this form, and

- Have had the opportunity to ask any questions you may have.

Your signature below means that you have received this information, have asked the questions you currently have about the research, and those questions have been answered. You will receive a copy of the signed and dated form to keep for future reference.

Participant: By signing this consent form, you indicate that you are voluntarily choosing to take part in this research.

_____ _____ _____ _____

Signature of Participant   Date   Time   Printed Name

Person Explaining the Research: Your signature below means that you have explained the research to the participant/participant representative and have answered any questions he/she has about the research.

_____ _____ _____ _____

Signature of person who   Date   Time   Printed Name
explained this research

Appendix D: Pre-Interview Questionnaire

Pseudonym: _____

Program of Study / Major: _____

1. What year are you currently in?

    a. Freshman   c. Junior

    b. Sophomore   d. Senior

2. How many credits have you earned so far?

    a. 0-15 credits   d. 46-60 credits

    b. 16-30 credits   e. 61-90 credits

    c. 31-45 credits   f. 91 or more credits

3. What is your current GPA?

    a. 3.5 or above   d. 2.0 - 2.49

    b. 3.0 - 3.49   e. Below 2.0

    c. 2.5 - 2.99

4. How many online courses have you completed? _____

5. How many online courses are you currently enrolled? _____

6. Do you attend full-time or part-time? _____

7. Gender: Female   Male   Rather not respond

8. Date of birth: _____

9. Race/ethnicity:

a. American Indian / Alaska Native

b. Asian

c. Black or African American

d. Hispanic

e. Native Hawaiian / Pacific Islander

f. White

g. Two or more races

h. Prefer not to respond / Unknown

Disability-related Questions (Optional)

1. Briefly describe your learning disability?

2. At what age were you diagnosed?

3. Please list or describe the accommodations you used in high school.

4. Please list or describe the accommodations you used in college.

Appendix E: Interview Protocol

- Interviewer reviewed notes and protocol prior to each interview.

- Tape-recorded each interview (if permission was granted).

- Each interview lasted between 60 to 75 minutes.

- Interview Methodology:

  - Interviews were implemented with a customized approach allowing for an in-depth investigation

  - Follow-up questions were used to stimulate interviewee memory

  - The interviewer used a semi-structured question set containing 14 questions.

  - All predetermined questions were the same for all participants.

- Each interview session was documented with the following:

  - Designation of the interviewee,

  - Location of the interview,

  - Date,

  - Start time,

  - Finish time, and

  - Any atypical events and occurrences that may affect outcomes.

Appendix F: Interview Questions

1. Describe how and why you decided to take an online course?

   Follow up: Before enrolling, were there aspects of an online course that you worried about in terms of your learning disability? (If so, what?)

   Follow up: Before enrolling, were there aspects of an online course that you thought would be beneficial to you in terms of your learning disability? (If so, what?)

2. Describe your experience taking your online class(es).

   Follow up: Did you experience any difficulties in your online course? (If yes, what where they? Do you think your learning disability played a part in this?).

   Follow up: Did you experience any advantages by taking an online course? (If yes, what where they? How do you think these experiences relate to your learning disability or to your accommodations?).

3. How would you compare your online course(s) to your in-class course(s)?

   Follow up: Describe any drawbacks or difficulties in your online course.

   Follow up: Describe any advantages or benefits in your online course.

   Follow up: Did you think that your learning disability affected your experiences with your online course? (If yes, then how?).

   Follow up: Did your experience in your online class make you want to take fewer or more online courses? (What condition would cause you to enroll in another online course?).

4. Describe your interactions with other students as compared to in-class courses?

5. Describe your interactions with your instructor as compared to in-class courses?

Follow up: Describe your accommodations in your online class.

Follow up: What was the difference in requesting accommodations in your online class compared to in-class requests?

6. Describe your experience with the online technologies that you utilized.

7. Describe how you prepare for your online class.

Follow up: Where there assignments or exams you found challenging as a result of your learning disability? (Do you think your learning disability influenced that? If yes, how?)

Follow up: Did you prepare for class or study differently for your online courses? (If yes, please explain in what ways).

8. What specific recommendations do you have for online instructors to support students with learning disabilities?

9. Is there anything else you would like to add?

Appendix G: Definition of Terms

The following definitions and pertinent terms are established for consistent reference and understanding throughout this document:

Accessibility of education - Making postsecondary education more accessible to students with learning disabilities through curriculum development, consistent with the principles of universal design for learning (HEO Act, 2008, Sect. 762, Para. G).

Accommodation is the adjustment of instruction and/or material to allow students with learning disabilities equal access to education. It is any modification in the method normally required to accomplish specific educational tasks, such as support services not required by the general population of a university.

Assistive Device is any technical tool or device used to assist people with disabilities in performing certain actions, tasks, and activities. It is defined by the Individuals with Disabilities Education Act Amendments of 1997 as "any item, piece of equipment, or product system that is used to increase, maintain, or improve functional capabilities of individuals with disabilities" (IDEA, 1997).

Distance Education is improved capabilities in knowledge and/or behaviors as a result of mediated experiences that are constrained by time and/or distance such that the learner does not share the same situation with what is being learned (King, Young, Drivere-Richmond, & Schrader, 2001). Distance education is often supported by communications technology such as television, video, computers, email, mail, or interactive videoconferencing.

Distance Learning is the development of innovative and effective teaching methods and strategies to provide postsecondary faculty, staff, and administrators with the ability to provide accessible distance education programs or classes that would enhance the access of students with

disabilities to postsecondary education. This includes the use of accessible curricula and electronic communication for instruction and advising (HEO Act, 2008, Sect. 762, Para. D).

Learning disabilities is a neurological handicap that affects the brain's ability to understand, remember, or communicate information. It is a disorder in one or more of the basic psychological processes involved in understanding or in using spoken or written language. It may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations. Often the student will have one of the following disorders: perceptual disability, brain injury, minimal brain dysfunction, dyslexia, or developmental aphasia (Heward, 2006; Smith, 2004). The Federal definition states that learning disabilities include "such conditions as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia." According to the law, learning disabilities do not include learning problems that are primarily the result of visual, hearing, or motor disabilities; mental retardation; or environmental, cultural, or economic disadvantage. Definitions of learning disabilities also vary among states. The most prevalent type of learning disability is dyslexia (National Center for Learning Disabilities, 2009). Frequently occurring learning disabilities include:

- *Dyslexia* is a reading disorder, which includes difficulty with decoding (sounding out words), word recognition, reading fluency (automaticity or speed of reading), and reading comprehension (National Institute of Neurological Disorders and Stroke, NINDS, 2010);

- *Dyscalculia* is a math disorder, which involves challenges in computation/calculation, problem solving, and application (National Center for Learning Disabilities, 2007);

202

- ***Dysgraphia*** is a written language disorder, which includes difficulty with receptive and expressive language, writing mechanics (grammar, punctuation), and spelling (NINDS, 2009);

- ***Auditory and Visual Processing Disorders*** is a specific disorder in which a person with normal hearing and vision has difficulty understanding and using verbal or written language (National Center for Learning Disabilities, 2011); and

- ***Non-verbal LD*** is a specific disorder that causes problems with visual-spatial, intuitive, organizational, evaluative, and holistic processing functions (National Center for Learning Disabilities, 2011).

Learning Management System (LMS) is a software application that automates the administration, tracking, and reporting of training events. (Ellis, 2009).

Online Institution is a two-year or four-year college or vocational school where students can complete their coursework online. Synonymous with *virtual institution.*

Online Learning is computer-mediated instructional environments or online learning environments (OLEs) (Quitadamo & Brown, 2001). It is an innovative approach for delivering classroom instruction to a remote audience, using the Internet as the medium (Yang & Cornelious, 2005, p. 1). It is frequently used interchangeably with distance learning, virtual learning, e-learning, or Web-based learning.

Universal Design is the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design. (Center for Universal Design, 2008).

Universal Design for Learning is a set of principles for curriculum development that give all individuals equal opportunities to learn. (Center for Applied Special Technology, 2010).