2015

Interpretative Phenomenological Analysis of Accessibility Awareness Among Faculty in Online Learning Environments

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A dissertation submitted in partial fulfillment of the requirements
for the degree of Doctor of Philosophy
in
Computing Technology in Education

College of Engineering and Computing
Nova Southeastern University
July 28, 2015

We hereby certify that this dissertation, submitted by Rachael Sessler Trinkowsky conforms to acceptable standards and is fully adequate in scope and quality to fulfill the dissertation requirements for the degree of Doctor of Philosophy.

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2015

An Abstract of a Dissertation Submitted to Nova Southeastern University
in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy

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Although all organizations and institutions should consider accessibility when developing online content, inaccessibility is a recurring issue in recent literature pertaining to online learning environments (OLEs) and faculty accessibility awareness. The goal was to describe how online faculty gain knowledge regarding accessibility, to explore the lived experiences of online faculty who have worked with students who have disabilities, and to gain a better understanding of how faculty experience the process of accessibility implementation. The following research questions guided this study: How do faculty in OLEs experience encounters regarding accessibility for students who have print related disabilities? How do faculty in OLEs experience the journey of developing the skills needed to provide accessibility for students with print related disabilities? What aspects of accessibility and Universal Design for Learning (UDL) do faculty members practice in OLEs and what meaning do they ascribe to the lived experience of providing these accommodations?

An interview guide was used to address the research questions. Participants were recruited from the Online Learning Consortium and Assistive Technology Industry Association for participation in phenomenological interviews, which were recorded and then transcribed verbatim. The transcripts of these interviews were analyzed to determine eight super-ordinate themes: Accessibility and usability awareness of online faculty; interactions and relationships between faculty, students, various departments, and outside organizations relating to SWDs and accessibility; different perspectives and experiences of faculty who teach courses within programs that have an emphasis on accessibility, AT, or working with people with disabilities; faculty experiences and perspectives of working with SWDs and providing accessible materials in OLEs; faculty training and experience with accessibility and people with disabilities; faculty autonomy within OLEs as it relates to creating accessible content; accommodations and accessibility features used in OLEs; as well as LMS accessibility and usability. The results of this study led to several implications regarding training and support services for faculty, students, other staff, and administration within online programs, best practices for implementing accessibility, as well as recommendations for future studies.

Acknowledgements

It is difficult to come up with words to express my sincere appreciation and gratitude for my dissertation chair, Dr. Laurie Dringus. Thank you for your valuable feedback, guidance, continuous encouragement, and support. I feel that I have grown so much throughout this journey because of your mentorship and I will always be grateful. Every meeting with you has helped to motivate me and I am inspired by your wealth of knowledge, insight, and humbleness. It has been an honor to be your student.

I am also incredibly grateful for my dissertation committee members, Dr. Steve Terrell and Dr. Marti Snyder. Thank you for your generous support, constructive feedback, and shared knowledge of both writing and research. Your diligent responses helped me shape this dissertation into a work that I am proud of.

To my fellow Lions at the West Palm Beach Lions Club, thank you for assisting me with a scholarship to help with this journey. I would also like to thank you for your commitment to serving the community and working to improve the lives of people with visual impairments and other disabilities.

To Dr. Susan Baxter and Diane Fahr, my wonderful friends, you are truly a part of my family. Thank you for your ongoing encouragement and friendship throughout these many years. I appreciate that you have always been there to listen and offer advice.

To my wife, Jolene Sessler Trinkowsky, I would like to express my deepest love and appreciation for your unwavering support, encouragement, and understanding throughout this journey. Thank you for believing in me. I would also like to express my gratitude and love to both of our wonderfully loving families for your understanding and support throughout this process. To my sister, Bonnie Shew, who was my first teacher, thank you for instilling with me the importance of education. To my mother, Marilyn Trinkowsky, whose favorite question has been, “When are you going to finish,” it is my pleasure to announce that the time is now! I dedicate this dissertation to the next generation of our family and hope that they strive towards reaching their goals through higher education.

Lastly, I would like to thank the participants of this study for their time and candidness in sharing their experiences.

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Chapter 1

Introduction

Background

Although all organizations and institutions should consider accessibility when developing online content, inaccessibility is a recurring issue in recent literature pertaining to online learning environments (OLEs). According to Coombs (2010), OLEs have the potential to be accessible learning environments for people with print related disabilities, such as visual impairments, upper body motor impairments, hearing impairments, and specific learning disabilities (SLDs). Two of the principal advantages of OLEs for students with disabilities (SWDs) include the flexibility of anytime-anywhere instruction and the relief from having to obtain transportation to and from classes as required in face-to-face settings (Burgstahler, 2007). A nationwide survey of online faculty and chief academic officers conducted by Allen and Seaman (2015) indicated that the percentage of administrators that believe that "…online learning is critical to their institution's long term strategy has grown from 48.8% in 2002 to 70.8% this year" (p. 4).

Despite the potential advantages offered by OLEs to SWDs, accessibility can be the deciding factor for whether or not a student with a disability is able to succeed in a course. Candido (2008) stated that students with visual impairments prefer the format of

OLEs compared to face-to-face classrooms; however, incompatibility with assistive technology (AT) and other accessibility issues may overshadow these potential benefits. Vanderheiden (2008) discussed that accessibility awareness is essential since there is frequently a delay in AT software development to catch up with technology advancements and changes. Furthermore, Salmon (2008) stated that "…most OLEs are inaccessible to individuals who are blind or have low vision because the developers of online courses are not following basic accessibility guidelines" (para. 3). Due to accessibility issues in OLEs, there have been legal disputes at Penn State University and Arizona State University regarding access for students with visual impairments to inaccessible social networking websites, course management software, and e-readers (Parry, 2010). More recently, there were additional lawsuits brought to Harvard University and the Massachusetts Institute of Technology for issues related to a lack of closed captioning services (Fabris, 2015). Hence, inaccessibility can shift the nature of OLEs from offering accessible opportunities for students with disabilities to a blockade for those same students (Burgstahler, Corrigan, & McCarter, 2005; Schmetzke, 2001).

It is important to consider who is responsible for the accessibility of course content. Gladhart (2009) and Powell (2010) reported that faculty are often responsible for creating much of the instructional content within OLEs. Therefore, to achieve accessibility in this growing educational arena, faculty must be made aware of issues pertaining to accessibility, and they must be willing to incorporate this knowledge into their courses (Cook & Harniss, 2007). A study by Ortiz, McCann, Rayphand, and Leong (2009) indicated from their survey research of online faculty that there is a positive correlation between faculty having contact with people who have disabilities and their

level of accessibility awareness. However, Burgstahler (2007) stated that faculty in higher education are both inexperienced and untrained in working with students who have disabilities.

Rather than addressing faculty and student accessibility concerns, disability advocates within schools often discourage SWDs from taking online courses (Ferguson, 2005). Roberts, Crittenden, and Crittenden (2009) estimated that in higher education institutions, SWDs are under enrolled in OLEs compared to their peers without disabilities in contrast to enrollment within traditional face-to-face classrooms. This under enrollment of SWDs in OLEs may explain Burgstahler's (2007) findings relating to faculty inexperience in this area. Ortiz et al. (2009) stated that it may be possible that faculty have not had a need for accessibility accommodations due to minimal exposure to SWDs. If SWDs are not enrolling in OLEs, faculty will not have an opportunity to gain experience addressing accessibility concerns.

Institutions of higher education have ethical and legal responsibilities to all students, including those with disabilities (Seale, 2006). From a perspective of attempting to effect change, Carlson (2004) discussed two "routes to gain accommodations at a university: building awareness that leads to a policy, or engaging in 'radical activism,' which can take the form of a lawsuit" (para. 43). Marty Blair, director of the National Center on Disability and Access to Education, stated that his preference is to "persuade colleges on moral grounds than bring up the specter of lawsuits" (para. 52), and it is his opinion that SWDs are drawn to institutions where accessibility services and considerations are already in place (as cited in Carlson, 2004). Therefore, it is important

to consider the current trends, as well as issues concerning accessibility within OLEs (Roberts et al., 2009).

Problem Statement and Goal

There are currently many techniques, guidelines, legislation, and recommendations for improving course accessibility for OLEs, yet it is difficult to ascertain what methods are being implemented and how faculty gain knowledge relating to accessibility. Coombs (2010) stated that administrators and faculty often fear that the process of creating accessible content is technically complex and costly. On the contrary, Coombs explained that this fear is unwarranted and that ensuring accessibility in OLEs is neither complicated nor expensive when faculty and staff have the proper knowledge, awareness, and planning strategies in place. However, despite this potential for accessibility, Ortiz et al. (2009) found that very few faculty are implementing accessibility practices in their OLEs. This may be an indication that they have not had experiences with accessibility, principles of Universal Design for Learning (UDL), or SWDs.

Further study is needed to determine faculty knowledge and awareness of accessibility issues in OLEs (Ortiz et al., 2009). There is a need to describe what faculty in higher education institutions know about accessibility, what they perceive as barriers to accessibility, and what they believe would improve accessibility within their OLEs (Ferguson, 2005). According to Freire, Russo, and Fortes (2008), there is also a need to better understand accessibility awareness, so that new strategies can be developed to foster improvements.

There is a tremendous amount of information available regarding how to make course content accessible. However, educators have many different methods for obtaining knowledge on accessibility, such as trainings, access to institutional policies on accessibility, and experience with students and others who have disabilities. Accessibility in OLEs also encompasses many other factors that faculty should be aware of, including the design of word processing documents, spreadsheets, Portable Document Format (PDF) files (https://acrobat.adobe.com/us/en/products/about-adobe-pdf.html), presentations, videos, audio, etc., which must be considered when ensuring accessibility for SWDs (Coombs, 2010).

A lack of awareness among online faculty is noted as being one of the major factors relating to inaccessibility in OLEs (Coombs, 2010; Gladhart, 2009; Schmetzke, 2001). Many developers and educators are unfamiliar with the basic constructs of accessibility, which results in a lack of understanding of how to address accessibility issues for SWDs (Freire et al., 2008). Ortiz et al. (2009) posited that low levels of accessibility awareness among online faculty may be attributed to a lack of experience in working with SWDs, as well as not having prior experience in developing accommodations. Therefore, the researcher focused on faculty who have experience working with students who have disabilities, as they likely would have more insight into accessibility awareness.

The goal of this phenomenological study was to describe the lived experiences of faculty in OLEs regarding their encounters with accessibility for students who have print related disabilities to understand the issues regarding accessibility awareness and implementation. The researcher sought to describe the essence of how faculty experience

working with students who have disabilities, their journey towards gaining needed awareness of accessibility methods, and how they implement accommodations for these students. Rather than attempt to form a new perspective, set of guidelines or resolution, the addressable problem of this dissertation was the need to understand the essence of accessibility awareness among faculty who work with students who have disabilities, as well as to describe the experiences of how they gain awareness and implement accessibility within OLEs. The purpose of this dissertation was to describe how online faculty gain knowledge regarding accessibility, to explore the lived experiences of online faculty who have worked with students who have disabilities, and to gain a better understanding of how faculty experience the process of accessibility implementation.

Research Questions

The following primary research question guided this study:

RQ1. How do faculty in OLEs experience encounters regarding accessibility for students who have print related disabilities?

The following sub-questions highlighted specific areas of interest regarding how faculty perceive their experiences as they gain accessibility awareness and implement accessibility practices.

RQ2. How do faculty in OLEs experience the journey of developing the skills needed to provide accessibility for students with print related disabilities?

RQ3. What aspects of accessibility and UDL do faculty members practice in OLEs and what meaning do they ascribe to the lived experience of providing these accommodations?

Rationale and Need for this Study

Stance of the Researcher

Munhall and Chenail (2008) discussed the need to describe the evolution of the study including the reasoning for the choice of methodology, as well as the personal experience of the researcher leading to the choice for the research study. Chenail (2011) identified that qualitative researchers should select a research topic that fits the passion of the researcher. This researcher has been working with people with disabilities (PWDs) since 1997 as a teacher, rehabilitation counselor and an AT instructor for people with visual impairments. Throughout this experience, this researcher has had experience teaching technology to people with visual impairments of all ages, including screen readers, smart phone accessibility, braille technology, screen magnification software, and a variety of other accessible devices. In response to numerous experiences with inaccessible software, documents, Web pages and OLEs, this researcher has developed a passion for advocacy for accessibility within the digital world. While this researcher does not have personal experience teaching in OLEs, she has been a student in OLEs and has worked as a technology instructor for higher education students with visual impairments, who are required to interact with OLEs and Learning Management Systems (LMSs). Knowing the potential benefits of OLEs for SWDs, and facing numerous accessibility obstacles side by side with SWDs has strengthened the personal desire to explore the topic of accessibility awareness of faculty in OLEs.

Relevance and Significance

The twelfth annual survey of more than 2,800 U.S. higher education institutions examined the trends in OLEs to evaluate the status of online education (Allen & Seaman, 2015). Although Allen and Seaman recognized variations of OLEs, they defined an online course as "…one in which at least 80 % of the course is delivered online" (p. 7). Overall, throughout the different versions of this study, Allen and Seaman delineated that there has been a steady growth of students enrolling in OLEs. In a previous report, Allen and Seaman (2010) stated that there was a "…twenty-one percent growth rate for online enrollments…" and they concluded that in 2011, the ten percent growth rate for OLEs "…far exceeds the less than one percent growth of the overall higher education student population" (Allen & Seaman, 2011, p. 4). They reported that in 2011, approximately 31% of students in higher education elected to participate in OLEs (p. 4). While the current report indicates that the growth rate of online enrollments has tapered and even declined slightly for the past four years, it is important to note that online enrollments are "…still greater than the growth rate of the overall higher education student body" (Allen & Seaman, 2015, p. 14).

Two-thirds of degree granting institutions reported that they offer some form of online learning opportunity according to the U.S. Department of Education, National Center on Education Statistics (Parsad & Lewis, 2008). However, while enrollment in OLEs for the general population of students increased, the percentage of SWDs enrolled online at post-secondary institutions decreased from 11.3 % in 2003-2004 to 10.8 % in 2007-2008, and the percentage of SWDs enrolled in online graduate courses was 7.6 % in 2007-2008 (Snyder & Dillow, 2011). Although enrollment in OLEs has been growing,

the total percentage of SWDs in higher education has been decreasing. SWDs are likely under enrolled in OLEs compared to face-to-face courses (Roberts et al., 2009).

Without sufficient accessibility awareness among faculty, Fichten et al. (2009) acknowledged that there were numerous accessibility concerns for SWDs in OLEs. Fichten et al. conducted a survey that assessed the experiences of SWDs enrolled in OLEs, as well as the experiences of the faculty and staff who worked with these students. The number one reported issue for students, faculty, disability service personnel, and OLE staff was the inaccessibility of websites and LMSs. The majority of students and disability service providers indicated that most problems faced by SWDs in OLEs remain "unresolved" (Fichten et al., 2009). Since "unresolved" was cited most frequently as the "resolution" for accessibility issues, they recommended further research to explore this issue. They suggested that issues may remain unresolved due to a lack of accessibility awareness among faculty and staff (Fichten et al., 2009).

Coombs (2010) stated that "…creating accessible online learning experiences for SWDs can do even more than give them a quality education—it can empower them to become stronger, more self-reliant people." (p. xiii). Yet, OLEs continue to have issues with accessibility because faculty and staff frequently do not understand how to create accessible course content (Coombs, 2010). Seale (2006) stated that the responsibility of OLE development should be shared equally between all pertinent staff, yet Gladhart (2009) reported that faculty are frequently responsible for the creation of course content. Because many faculty are not familiar with technology, faculty preparing to teach online need an understanding of how to adapt their skills for teaching in a face-to-face classroom to an online environment (Powell, 2010). In addition to an awareness of how

to deliver their course content online, Coombs (2010) stated that faculty require an understanding of how to make that content accessible.

The need for this work is demonstrated by Ortiz et al. (2009), who conducted a study at the University of Hawaii, Manoa, to address the awareness, practices, and accommodations of distance learning faculty through the creation and implementation of an anonymous web based survey. Ortiz et al. created a survey using open-ended (qualitative) and Likert scale (quantitative) questions to evaluate faculty awareness, practices, and accommodations of UDL. The research questions sought to answer which elements of UDL faculty members used, whether knowing someone with a disability had an influence on perspectives regarding UDL, and whether there was a correlation between beliefs regarding UDL and faculty practice. Results of the study indicated that experience with people who have disabilities was related to higher levels of awareness and practices regarding accessibility and UDL (Ortiz et al., 2009). The two elements of UDL that were used most frequently by participants were "few navigations" and the "use of clear simple language;" however, there were low numbers reported on the other elements of UDL, possibly indicating a low level of accessibility awareness. Ortiz et al. stated that it may be possible that faculty have not had a need for accommodations due to minimal exposure to SWDs.

While the Ortiz et al. (2009) study had interesting findings, there were significant limitations. One limitation was the implementation of the survey at a single institution. It would be meaningful to understand the phenomenological aspects of faculty accessibility awareness across various institutions to gain a broader perspective. Another limitation of the Ortiz et al. survey was the small sample size of 20 participants. Considering that there

were quantitative measures applied, a replication study would need a large number of participants. According to Gay and Airasian (2003), "…a sample size of 400 should be adequate…" when the population has about 5,000 or more people (as cited by Leedy & Ormrod, 2005, p. 207). Considering that more than six million students participated in online learning in 2010 (Allen & Seaman, 2011), it is likely that the overall population of faculty teaching online in higher education well exceeds 5,000. Furthermore, the sample size calculator available at http://www.surveysystem.com/sscalc.htm, indicates that a sample size of 384 would be sufficient for a population size of one million or more to produce statistical results with a 95% confidence level and a ± 5% confidence interval (O'Leary, 2010, p. 165). To achieve this sample, a survey would need to be sent out to approximately 2,000 people. A third limitation is that there was no discussion as to how Ortiz et al. determined the questions included in the questionnaire, pilot testing, or the reliability and validity of the survey.

Barriers and Issues

Decentralization

Clapper and Burke (2005) pointed out that accessibility within OLEs is quite complex. Not only are there unique issues to each school, but every department and individual faculty member within a school can have an impact on the outcome of accessibility. This decentralization means that many different staff members share the responsibility of accessibility, yet they often do not coordinate this responsibility with one another (Carlson, 2004; Ferguson, 2005). Previous research has examined views, attitudes and awareness of academic administrators, web designers, technology specialists, disability services, faculty, and the Americans with Disabilities Act of 1990

(http://www.ada.gov/) (ADA) coordinators regarding web accessibility in OLEs (Ferguson, 2005; Lamshed, Berry, & Armstrong, 2003; Roh, 2004; Ortiz et al., 2009).

Faculty Autonomy over Design

Faculty often have a high level of control over the design of their online courses and this is in contrast to Seale's (2006) recommendation for sharing the responsibility of accessibility in OLEs between the various stakeholders. Ferguson (2005) stated that most of the schools involved in her study "…foster faculty autonomy at the expense of ADA compliance…" (p. 151). This indicates that the concept of faculty autonomy has become such a critical issue in OLEs that it often overrides and hinders the importance of course accessibility. Because faculty lack accessibility training (Clapper & Burke, 2005; Ferguson, 2005; Lamshed et al., 2003; Roh, 2004) they are often not equipped to plan for accessibility in their online course development on their own. Research is needed to determine OLE faculty's knowledge base and awareness of accessibility issues to understand how to improve accessibility implementation in OLEs.

Barriers and Issues Related to this Study

Because there are many facilities offering online learning opportunities, the population of OLE faculty is expansive. To obtain a larger sampling base of OLE faculty, participants were recruited from the Sloan Consortium, which is now the Online Learning Consortium (OLC) (http://onlinelearningconsortium.org/about/olc-2), "…the leading professional online learning organization devoted to providing best practice instruction, research, publications and guidance to educators around the world" (para. 1). Additionally, faculty were also recruited from connections made through the Accessing Higher Ground (AHG) cohort at the Assistive Technology Industry Association (ATIA),

as well as the ATIA conference in general. AHG "…focuses on the implementation and benefits of… Accessible Media, Universal Design and Assistive Technology in the university, business and public setting" (Association on Higher Education and Disability (AHEAD), 2015, para. 1) and they had a cohort at the ATIA conference. Participants were recruited through conferences for both OLC and ATIA, and included faculty who teach at least one online course. It was expected that results would indicate a negative representation of participants' respective educational institutions if accessibility awareness levels are low, similar to the findings of Roh and So (2005). Therefore, confidentiality was of utmost importance and measures were taken to ensure the privacy and rights of all participants.

Limitations and Delimitations

Limitations of the Study

Since no specific institution was singled out, the results were reviewed individually for each participant interviewed. Faculty participants were somewhat limited by geography; however, all efforts were made to reach out to faculty from a variety of institutions in the United States of America (USA) through the OLC and ATIA. One of the limitations was that the results would only demonstrate experiences with accessibility, training, policies, and SWDs as they were self-reported by individual faculty members. Furthermore, the researcher did not conduct comparative analysis to determine how accessibility awareness levels among faculty relate to the accessibility of their actual OLEs. This type of analysis may be a suggested topic for future research.

Delimitations

Smith, Larkin, and Flowers (2009) recommended using a "purposive homogeneous sample" (p. 49) for IPA studies. The participants were delimited to online faculty, who were currently teaching at least one online course, who had experience working with SWDs in OLEs. The researcher selected participants who were able to provide the most meaningful lived experiences. According to Munhall and Chenail (2009), "…the usual references to sample size, generalizability, or probability should not be listed as limitations *since they do not hold the same meaning for qualitative research methods…*" (p. 40).

Definition of Terms

Accessibility Awareness: Lamshed, Berry, and Armstrong (2003) defined accessibility awareness as "…understanding the need and requirements of accessibility conformance" (p. 10).

Assistive Technology (AT): Cook and Hussey (1995) defined assistive technology as a "broad range of devices, services, strategies, and practices that are conceived and applied to ameliorate the problems faced by individuals who have disabilities" (p. 5 as cited by Seale, 2006). This may include software and/or hardware that can assist with writing, screen reader software, optical character recognition (OCR) software, voice recognition software, magnification software, modified keyboards or other input devices, and electronic braille (Fichten et al., 2009).

Learning Management System (LMS): According to Teasley and Lonn (2007), learning management systems "…allow coordination, distribution and retrieval of online course materials and facilitate online communication between instructors and students and

among students themselves" (as cited by Leeder, Lonn & Hollar, 2012). Other common terms used to describe web-based e-learning technologies include: courseware, virtual learning environments (VLE), and course management systems (CMS) (Leeder et al.). "Two of the most widely used e-learning LMSs are Moodle (open source) and Blackboard (proprietary)." (Ruth, 2010, p. 79).

Online Course: "A course where most or all of the content is delivered online" at least 80 percent of the time (Allen & Seaman, 2011, p. 7).

Online Faculty: Faculty teaching online will be defined as those who are actively teaching at least one graduate or undergraduate course that is online at least 80 percent of the time (Allen & Seaman, 2011).

Online Learning Environments (OLEs): Online learning environments, as described by Coombs (2010), include all components used in the online course. This may include word processing documents, spreadsheets, PDF files, presentations, videos, audio, LMSs, etc. (Coombs, 2010).

Students with Print Related Disabilities: Coombs (2010) defined this population as students with disabilities including: visual impairments, upper body motor impairments, hearing impairments, and specific learning disabilities.

Universal Design (UD): According to Ron Mace, "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" (http://www.ncsu.edu/ncsu/design/cud/about_ud/about_ud.htm, para. 1).

Universal Design for Learning (UDL): According to the National Center on Universal Design for Learning, at the Center for Applied Special Technology (CAST) (2011):

> "Universal design for learning is a set of principles for curriculum development that give all individuals equal opportunities to learn. UDL provides a blueprint for creating instructional goals, methods, materials, and assessments that work for everyone--not a single, one-size-fits-all solution but rather flexible approaches that can be customized and adjusted for individual needs" (para. 1).

Summary

The researcher presented original work in the extension of the Ortiz et al. (2009) study from a different methodological stance, using an interpretative phenomenological analysis (IPA) as outlined by Smith et al. (2009). In the early stage of development, this researcher was initially planning to conduct a quantitative survey study. However, several potential issues arose and it became apparent that a qualitative study would allow for a meaningful description of the phenomena of accessibility awareness among online faculty. There have been numerous studies, which will be discussed in the review of literature, on the topic of accessibility in OLEs, and many of these have been primarily quantitative. However, there is still a gap in the literature in describing how faculty experience the process of gaining knowledge and implementing accessibility practices for SWDs.

A quantitative study that focused on a sample of faculty who do not have specific experience with SWDs would have likely produced results indicating that faculty have either little to no awareness of accessibility factors or a very high level of awareness. Survey research using non-probability sampling techniques would not be generalizable to the entire population. It would have been very difficult to obtain a probabilistic random sample. As indicated by Nardi (2003), a very high return rate of 60-70% is necessary for survey research or the reliability of the random sample would be compromised. Munhall and Chenail (2008) indicated that "…in *qualitative* studies, *sample size* might not be as

important as it is for quantitative studies" (p. 37). The choice of a qualitative, phenomenological methodology allowed for a meaningful look into the insight, attitudes, awareness and practices of online faculty concerning accessibility for SWDs. Details of the IPA methodology are discussed further in the review of literature, as well as a discussion of additional studies that support the need for this current study.

Chapter 2

Review of Literature

Introduction

This review of literature explored the research that has been conducted on the topic of accessibility within online learning environments (OLEs), and the implications of accessibility awareness, or lack thereof, among online educators. This section is divided into the following topics: History of accessibility awareness in OLEs, faculty accessibility awareness in OLEs, need for reliable and validated accessibility awareness instruments, components of accessibility that faculty need to understand, accessibility simulations for the Web and LMSs, Universal Design for Learning (UDL), accessibility indicators, a discussion of AT and UDL, and an introduction to interpretative phenomenological analysis (IPA). It was important to explore research conducted prior to the Ortiz et al. (2009) study to understand the importance of this current study.

History of Accessibility Awareness in OLEs

In 2002, research focusing on the accessibility of OLEs was uncommon (Schmetzke, 2001). Witt and McDermott (2004) called for a "culture shift" (p. 55) to improve the awareness of accessibility issues and suggested that training is needed to help administration and faculty in schools of higher education become well-informed of the concepts of accessibility. According to Witt and McDermott, some important areas

that require awareness are industry guidelines, as well as an understanding of the importance of early planning for the development of accessible OLEs. Several research studies explored the topic of accessibility in OLEs and awareness. This section addresses seminal research that supports the need for this work including: Lamshed, Berry, and Armstrong (2003), Roh (2004), Roh and So (2005), Ferguson (2005), and Freire et al. (2008). Appendix A provides a summary table of the key aspects of four of these legacy studies. All of these researchers recommended further study to better understand how to improve accessibility awareness.

The Lamshed et al. (2003) study was one of the first studies on the topic of accessibility in OLEs. The survey created for this study, the Australian Flexible Learning Framework Survey (AFLFS), evaluated accessibility awareness and policies at the institutional level in schools of higher education for the development of accessible websites and course content. This study included surveys of 63 administrators and web designers for OLEs in Australia. In response to a question asking "What would assist in implementing accessibility standards across the organi[s]ation" (Lamshed et al., 2003, p. 47), 24 respondents stated that training and development was needed, nine stated that there was a need for easy to understand resources, seven stated that there was a need for an awareness campaign, eight stated that clear standards or checklists were needed, and the remaining participants listed a variety of different responses. One of the limitations to the Lamshed et al. study was that the participants had a strong familiarity with accessible design. They concluded that most administrators understood that accessibility awareness was a key issue, and many of the administrators reported that other people within their organizations, including faculty, were not aware of accessibility principles.

Lamshed et al. (2003) discussed LMSs as an area of concern because they do not always provide for necessary accessibility enhancements. Faculty at most schools did not typically have much of a say in the decision for which LMS would be used in their schools. If an LMS has limitations regarding accessibility, then the resulting OLEs are likely to have accessibility issues (Lamshed et al., 2003). However, they stated that if faculty are aware of potential barriers, then they are in a prime position to identify the issues regarding inaccessibility of the existing LMS, and then to inform administration and management of these issues (Lamshed et al., 2003).

Another study that assessed the status of accessibility in OLEs was Roh's (2004) qualitative study, which investigated online students' and educators' awareness of accessibility to determine some of the difficulties within OLEs for SWDs. Roh's study involved a single university and four students, each having one of the following disabilities: visual impairment, hearing impairment, a mobility impairment, and a cognitive or neurological impairment. Individual interviews, as well as one focus group explored accessibility issues and concerns. The most common Web accessibility issues included key concepts to the field of accessibility, such as, "content design," "navigation design," "screen design," and "information architecture/infrastructure" (p. 183). Roh (2004) reported that accessibility awareness was not being reflected in the development of online course materials, which were often inaccessible. Administrators' accessibility awareness did not necessarily translate to faculty having the same level of awareness, and there was a lack of understanding among faculty regarding the existing accessibility guidelines, such as Section 508 and the original Web Content Accessibility Guidelines (WCAG). Furthermore, without a clear policy from the university, Roh stated that faculty

lacked guidance for creating accessible course content. In conclusion, Roh (2004) indicated that there is a need for research to determine how to improve the awareness of accessibility issues among educators, as well as to identify where additional resources and training are needed.

Following Roh's dissertation study, Roh and So (2005), conducted a study sampling OLE educators, administrators and SWDs at a single university in a mid-western state. Interviews conducted with participants assessed their accessibility awareness, as well as their strategies and challenges for the development of accessible course content. The sampling of interviewees included two online educators, two administrators and four SWDs. The small sampling size may not be generalized to the wider population of OLE faculty. To ensure maximum reliability and validity, the semi-structured interview protocol allowed for both interviewers to be present, the oral interviews were recorded, and then each participant confirmed the accuracy of the interview transcript. Due to difficulties, two of the SWDs participated in the interview process via email. Results indicated that OLE staff and SWDs "…did not know or hear about UDL or Web accessibility and its standards and guidelines" (Roh & So, 2005, p. 3), and this lack of awareness resulted in OLE staff not knowing how to address accessibility standards, such as Section 508 and the Web Content Accessibility Guidelines (WCAG 2.0) (W3C, 2015), which "…covers a wide range of recommendations for making Web content more accessible" (para. 1). Roh and So stated that there is a need to improve the accessibility awareness of staff involved in the design of OLEs.

Another study published during the same year was Ferguson's (2005) instrumental case study. This study was broader than the studies conducted by Roh (2004), as well as Roh and So (2005), and it focused on four schools of higher education that had a strong emphasis in online education to determine the status of policies, procedures, legislature interpretation, and attitudes pertaining to online course accessibility. However, Ferguson narrowed the student population of interest from all SWDs to those who use AT. Ferguson's research centered on those students with significant disabilities who use AT, since this population of students would be affected the most by accessibility issues.

Students with print related disabilities were and are still the most likely to require AT for use in OLEs, including: Magnification software and hardware for students with low vision, screen reading software for students who are visually impaired or blind, voice recognition software for students who have physical disabilities or SLDs, and alternatives to physical keyboards for students with physical disabilities (Coombs, 2010). "Out of four institutions with a combined student population of approximately 74,000 students, fewer than 15 SWDs were enrolled in online courses, and 10 of those were at one institution" (Ferguson, 2005, p. 158). In regards to how staff in OLEs dealt with online course accessibility, Ferguson (2005) stated that, "…the prevailing attitude is that they will deal with the problem when the problem arises" (p. 151). As a result, accessibility issues were dealt with on a "case-by-case" basis. This was not the best practice according to researchers, who stated that it is essential to consider accessibility factors during the early planning phases of development (Freire et al., 2008; Schmetzke, 2001; Witt & McDermott, 2004).

Accessibility awareness proved to be an ongoing concern based on the work of Freire et al. (2008). They stated that accessibility awareness was not only an issue for educators, but for all Web developers. Additionally, Freire et al. stated that the need to understand how developers of all types "perceive accessibility… is crucial to propose new approaches to boost Web accessibility" (Freire et al., 2008, p. 87). They assessed accessibility awareness among Web developers in Brazil, targeting online educators specifically. More than 40% of the participants were educators and most participants had a great deficiency in accessibility awareness (Freire et al., 2008).

Faculty Accessibility Awareness in OLEs

Another study on accessibility in OLEs was conducted by Fichten et al. (2009), through an exploratory study that assessed OLE problems and solutions for SWDs in Canadian higher education institutions. Web based surveys were issued to more than 200 students, 58 professionals from disability services, 28 faculty, and 33 OLE professionals. These researchers discussed the importance of ensuring accessibility during the early stages of content development, but they expanded the discussion beyond just Web accessibility to other items used within OLEs, such as Power Point presentations, video clips, and other digital information. They discussed previous research and the difficulty of comparing these studies because of their variances. Disabilities reported by the student participants included SLDs 41%, mobility impairments 23%, Attention Deficit Disorder (ADD) or Attention Deficit with Hyperactivity Disorder (ADHD) 21%, psychological or psychiatric disabilities 17%, hearing disabilities 13%, difficulties using hands or arms 12%, visual impairments including blindness 13%, neurological impairments 11%, speech or communication impairments 3%, and some students reported having two or

more disabilities. More than 60% of the students reported that they used AT to access OLEs and these included software that can assist with writing, screen reader software, optical character recognition (OCR) software, voice recognition software, magnification software, an adapted mouse, a modified keyboard, and refreshable electronic braille. All faculty had experience with at least one student with a disability in an OLE (Fichten et al., 2009).

Participants of the Fichten et al. (2009) study reported benefits, problems, and solutions of OLEs. Inaccessibility of websites or the LMS was the number one problem among all four samples. According to e-learning professionals, the inaccessibility of course notes and materials was also a significant issue. It is noteworthy that 36% of e-learning professionals felt that the inaccessibility of websites, LMS, as well as course notes and materials were problems in their institutions (Fichten et al., 2009). As mentioned previously, the most popular solution for these problems was "unresolved," but the researchers stated that it is significant that the second most common solution was a non e-learning resolution. Some other commonly reported solutions were assistance from the professor, purchase of new technology or software, and alternative formats. PDF accessibility was a concern and there was a lack of needed assistive technologies for all of the student disability groups. Some of the recommendations from the Fichten et al. study included: Teaching professionals how to create accessible PDF files, training faculty and staff how to access online resources pertaining to accessibility, and adopting institutional guidelines on accessibility in OLEs.

While available technologies have made it so that online materials may be easy to produce, Gladhart (2009) stated that an awareness and knowledge base is required for

educators to be able to make these materials accessible. Gladhart discussed institutional challenges for providing adequate training and monitoring to ensure that educators are aware of and implement accessibility practices. She created an online survey that was used with more than 400 faculty members in Alaska to determine what types of accommodations online faculty implemented. Survey questions were included to determine the referral rate to the office for disability services, types of disabilities faculty have provided accommodations for in OLEs, types of courses taught, instructional delivery methods, as well as which tools were used (these included online tests, video, PDF documents, etc.) (Gladhart, 2009). However, there was no discussion regarding the development, methods used for item selection, pilot testing, reliability, or validity of the survey. Findings indicated that more than one-fifth of the survey participants did not have a statement in their syllabus instructing students how they could contact disability services. A toolbox was created based on the results to assist faculty in the development of accessible course content. In conclusion, Gladhart indicated that most faculty lacked awareness and training in the area of accessibility for SWDs, and she stated that less than 9% of faculty had training in this area.

Components of Accessibility that Faculty Need to Understand

It is not necessary for faculty to have an in-depth knowledge of the numerous types of AT, nor do they need to be experts on accessibility (Coombs, 2010). However, they should have a basic understanding of the common types of accommodations available for PWDs and guidelines for accessibility. One of the most prevalent guidelines for accessible web page design is the Web Content Accessibility Guidelines (WCAG) 2.0 which was created and revised by the W3C (2015). The WCAG 2.0 has revisions that

intend to clarify and provide a more comprehensive explanation of accessibility than the original version. Brewer (2003) and Sloan et al. (2006) stated that simply following such guidelines as the WCAG will not ensure web accessibility, since this is a complex issue. Faculty need to be aware of accessibility guidelines and policies, as well as many other issues to foster accessibility in OLEs. The next sections of the review of literature explore research for some of the factors that need to be considered for faculty awareness, including: An understanding of how PWDs access the Internet and LMSs (Burgstahler & Doe, 2004; Papadopoulos, Pearson, & Green, 2008), UDL principles and how they apply to OLEs (Burgstahler 2011b; Poore-Pariseau, 2010), and quality indicators that are related to accessibility in higher education (Burgstahler, 2006; Burgstahler, 2011a).

Accessibility Simulations for the Web and LMSs

Accessibility simulations, such as those currently available for screen-readers, low vision, dyslexia, and distractibility (http://webaim.org/simulations) were proposed by Burgstahler and Doe (2004) as a tool to improve accessibility awareness for staff in OLEs to help them understand how SWDs access the Internet. Burgstahler and Doe recommended caution when choosing the types of accessibility simulations to use with instructors because these activities may have the opposite effect of their intentions. For example, simulations should offer positive results and the intent is not to inspire feelings of pity for PWDs. Instead, they stated that simulation activities should be designed to encourage an understanding of how accessibility and good design can provide opportunities for SWDs.

Papadopoulos et al. (2008) determined that there was a need for simulations demonstrating accessibility in LMSs, and developed simulations specifically for the

demonstration of how PWDs experience the Blackboard LMS, which Ruth (2010) stated is the most commonly used proprietary LMS. The simulations developed by Papadopoulos et al. (2008) were available online for faculty and staff from OLEs to explore exercises to help them understand what a person with a disability would experience in an LMS. Both Papadopoulos et al., as well as Burgstahler and Doe (2004) recommended simulations for the professional development of online educators.

Universal Design for Learning (UDL)

In addition to understanding how PWDs access OLEs, Burgstahler (2011b) stated that faculty need to be aware of the principles of UDL. The Center for Universal Design (CUD) at North Carolina State University established 7 principles of Universal Design (UD) in 1997 (Connell et al., 1997 as cited in Burgstahler, 2011b). Burgstahler (2011b) discussed the evolution of UD from an architectural perspective to its application in education. She explained that providing accommodations is a “reactive” approach based on a medical model and that offering courses that are designed according to UD apply a “proactive” approach which considers the accessibility needs of a wider population.

Poore-Pariseau (2010) presented an argument for the importance of applying principles of Universal Design for Learning and accessibility in OLEs. She stated that "…if a web page is set up in columns or in blocks, the screen reader technology may not interpret the correct order to read each piece of information, therefore rendering the technology unusable" (Poore-Pariseau, 2010, p. 148). Furthermore, she stated that UDL has the potential to offer SWDs an opportunity to effectively participate in OLEs, but that even when UDL has been applied appropriately, accommodations may be necessary for

some students. Faculty need to have supports to implement accommodations when they are needed in OLEs, including LMSs (Poore-Pariseau, 2010).

Although many LMSs have the means to develop accessible materials, Poore-Pariseau (2010) stated that faculty and staff in OLEs must have an understanding of how to employ accessible content within these systems. She stated that staff from the Office for Disability Services (ODS), in particular, need to be aware of accessibility in regards to OLEs, and to assist faculty and staff in the development of online course content. Although the focus of ODS was traditionally on face-to-face courses, Poore-Pariseau explained that they need to learn how to best counsel faculty to help ensure that online course materials and content are accessible. Moreover, she stated that all staff involved in online learning need training to gain an awareness of accessibility guidelines and best practices. She recommended an online resource for faculty and others involved in OLEs, which is Project Equal Access to Software and Information (EASI) (http://easi.cc/).

Rose, Hasselbring, Stahl, and Zabala (2005) discussed the importance of the integration of AT and UDL. They presented an example of how AT and UDL are essential in architecture to allow a person in a wheelchair access to buildings and environments. In the presented example, the wheelchair is the AT for the individual and the accessibility features within the buildings, such as elevators and ramps, are the examples of UD for the environment. Rose et al. (2005) discussed that each of these approaches alone is insufficient without consideration of the other. They stated, “When UDL and AT are designed to co-exist, learning for all individuals is enhanced" (p. 511).

Accessibility Indicators

Burgstahler (2006) presented the most critical challenges to widespread accessibility in OLEs. Although she stated that OLEs have a great potential for providing access to PWDs, many distance learning programs have not been created to be accessible to SWDs. Synchronous discussion forums present difficulties for people who use AT, yet Burgstahler (2006) stated that this type of learning method creates barriers for students without disabilities due to scheduling and accessibility issues. Burgstahler conducted an exploratory study to address the issues of accessibility in OLEs, as well as to assess the accessibility policies currently existing in these educational environments. This study evaluated the types of policies and practices that are associated with accessible distance learning programs. A list of "accessibility indicators" (p. 84) and examples of each indicator found in OLEs was based on related literature and previous work in this field. The majority of the schools that participated in this study had a component of distance learning at their institutions. This study led to the development of ten accessibility indicators. Of these indicators, five focused on "students," two focused on "distance learning designers," two focused on "distance learning instructors" and one focused on "evaluators" (Burgstahler, 2006, p. 86). Some of the indicators were: Homepage accessibility, statements pertaining to the policies for accessibility in webpage and distance learning course design, as well as faculty training on the issues of accessibility. The implication was that schools having more of these indicators would likely have a higher level of accessible course content in their OLEs (Burgstahler, 2006). These indicators have continued to be recommended as valid and reliable predictors of accessibility in OLEs (Burgstahler, 2011a).

Research Needed for Accessibility Awareness

Barzilai-Nahon, Benbasat, and Lou (2008) identified a need for research to evaluate the accessibility awareness of non-professional designers. Faculty are professionals and often experts in their particular fields, but they are not necessarily professionals in respect to accessible design. According to Barzilai-Nahon et al. (2008), "…there was a lack of reliable and validated instruments to measure the negative and positive influences on designers for attention to accessibility" (p. 1). This study considered the accessibility awareness of non-professional designers and presented the development stages of a reliable and validated survey to assess the accessibility awareness of non-professional designers. The survey focused on three general categories, including "attitude," "intention to produce" and "produce accessible information" (Barzilai-Nahon et al., 2008). Each of these categories was further broken down into various constructs. These items were assessed by 12 judges and inter-rater reliability measurements were used to eliminate confusing items. They measured the agreement between judges on all items, as well as the agreement among pairs of judges for the survey items. The resulting instrument consisted of 67 items with a very high level of inter-rater reliability from the judges and it was administered to a pilot sample of 106 users. Additional reliability assessments were conducted leading to the elimination of items and the rewording of others. The researchers recommended the implementation of additional pilot studies to assess the reliability and validity of the revised survey. Barzilai-Nahon et al. stated that further research is needed in this area is to identify factors that are related to the production of accessible content and to make recommendations that will help to improve accessibility awareness.

Smith et al. (2009) illustrated that statistical and nomothetic approaches, such as those suggested by Barzilai-Nahon et al., may not always be the best fit for research studies. Data retrieved through nomothetic approaches have a disadvantage when attempting to interpret meaning at the individual level. Interpretative Phenomenological Analysis (IPA), which is a qualitative approach, is described by Smith et al. as an approach suited for analysis to explore the essence of experience of each individual and this approach would be well suited to determine the lived experiences of faculty in OLEs regarding accessibility and their work with students who have disabilities.

Introduction to Interpretative Phenomenological Analysis (IPA)

Rationale for Choosing Qualitative Research and IPA

Chenail (2011) discussed that it is important for researchers to explain the reasoning for selecting a chosen methodology. According to Chenail, researchers should discuss the conceptual procedure of a research method, how this method is novel to the study, and explain how the methodology will address the research questions. The choice for selecting a qualitative approach for this study, specifically IPA, was a process that began with initial considerations for a quantitative approach. The brief review of literature and Appendix A discussed several studies that have probed into the accessibility of OLEs and faculty awareness of accessibility. It became apparent after considering quantitative approaches that a qualitative approach would be well suited for this particular inquiry. Munhall and Chenail (2008) stated, "Qualitative methods embrace the situated context and contingencies of human experience and search for meaning in the lives of human beings" (p. x), while quantitative studies are "…more concerned with theory testing, validation, and confirmation" (p. 11). Qualitative research, in general, is

"…most likely exploratory, naturalistic, subjective, inductive, ideographic, and descriptive/interpretative…" (Chenail, 2011, p. 1713).

This current study was suited to a qualitative approach based on Creswell's (2007) philosophical assumptions of ontology, epistemology, axiology, rhetoric, and methodology. Ontologically, the reality of the phenomenon of accessibility awareness is subjective and it would be beneficial to demonstrate "different perspectives" (Creswell, 2007, p. 17) of faculty regarding their experiences in working with SWDs in OLEs. This research took the stance of "insider research" (p. 17) to allow the researcher to spend time with participants in an interview setting to ascertain meaning from their lived experiences with accessibility and SWDs. Additionally, it was critical for the researcher to recognize the axiological need to consider the researcher's own values and biases (Creswell). This is even more important for IPA studies, in which the researcher will need to use an ongoing process of bracketing (Smith et al., 2009), detailed later in Chapter 3. Creswell (2007) discussed that the rhetorical assumptions of qualitative research are different from quantitative considerations. Lincoln and Guba (1985) compare the common terminology of quantitative researchers ("validity," "generalizability," and "objectivity") to terminology used by qualitative researchers ("credibility," "transferability," "dependability," and "confirmability") (as cited by Creswell, 2007). Qualitative researchers follow an inductive process that may result in alterations to the research questions to better fit the study as it progresses (Creswell, 2007). It may also be appropriate to write in first-person (Creswell) and this may be more appropriate for the final write-up describing the results of the study.

Creswell described five general qualitative research methods, which should not be compared to quantitative research, nor should any of these methods be considered an "…easy substitute for a 'statistical' or quantitative study" (p. 41). Qualitative research requires "extensive time in the field," and a "time-consuming process of data analysis…" (Creswell, 2007, p. 41). Of the five general approaches of qualitative research, a phenomenological approach was chosen, and narrowed down to an IPA methodology, as it fit the aim of this current study.

Background of IPA

Three theoretical principles central to IPA include: phenomenology, hermeneutics, and idiography (Smith et al., 2009). Creswell stated that the phenomenological researcher seeks to describe "…the meaning for several individuals of their *lived experiences* of a concept or phenomenon" (2007, p. 57), followed by an analysis for commonalities among participants for those experiences. The goal of this type of approach is to describe the essence of the experience, or as van Manen (1990) stated, "…the very nature of the thing" (p. 177 as cited by Creswell, 2007). Researchers using a phenomenological approach must use bracketing, also called epoché by Husserl, to suspend judgment about what is real and reduce bias during the research process (Creswell). The second theoretical principle of IPA is hermeneutics, which Smith et al. (2009) defined as the "theory of interpretation" (p. 21). While this method was originally designed to interpret meanings from biblical resources, it later was used in philosophical approaches to ascertain meaning from texts and other sources. Schleiermacher began using hermeneutics that involved both objective and psychological interpretations (Smith et al.). If performed correctly, Schleiermacher (1998) stated that hermeneutic

interpretation would allow for an interpretation that is superior to how participants or writers understand their own experiences (as cited by Smith et al., 2009). Smith et al. discussed that the "hermeneutic circle" is a key theme for IPA, as the process of conducting IPA is iterative that often requires flexibility as the researcher moves through different steps in the research process. The third theoretical principle influencing IPA is idiography, which is "concerned with the particular," (Smith et al., 2009, p. 29) rather than the general. Smith et al. explained that IPA studies are interested in how specific individuals experience a phenomenon under similar circumstances.

Smith et al. (2009) defined IPA as "…a qualitative research approach committed to the examination of how people make sense of their major life experiences." (p. 1). Furthermore, Smith and Osborn (2008) stated that, IPA "…attempts to explore personal experience and is concerned with an individual's personal perception or account of an object or event, as opposed to an attempt to produce an objective statement of the object or event itself." (p. 53). The primary goal of IPA is to understand the experience from each participant's perspective while using detailed analysis of transcripts to explore the essence of the experience, as well as how the participants are making sense of that experience (Smith & Osborn, 2008). According to Smith et al. (2009), this is a "…double hermeneutic because the researcher is trying to make sense of the participant trying to make sense of what is happening to them" (p. 3). Smith and Osborn (2008) stated that IPA is concerned with complexity, process or novelty (p. 55), since this method is an ideographic approach that "…is committed to the painstaking analysis of cases rather than jumping to generalizations" (p. 56).

Summary

This chapter provided a review of literature for accessibility awareness in OLEs. A history of accessibility awareness was discussed followed by an overview of faculty accessibility awareness, and components of accessibility that faculty need to understand. Next, the chapter provided information on accessibility as it applies to higher education and online learning. This included information on accessibility simulations for the Web and LMSs, a discussion of UDL, accessibility indicators, and research that is needed for accessibility awareness. The final section reviewed literature pertaining to IPA, which is the chosen methodology for this research project. In the next chapter, IPA is described in more detail along with the specific methods that were used for collecting and analyzing data.

Chapter 3

Methodology

Introduction

Chenail (2011) stated that "…qualitative research is a circular, recursive, and reflective process" (p. 1722). Therefore, the nature of interpretative phenomenological analysis (IPA) is flexible in design; as Smith and Osborn (2008) stated that "…there is no single, definitive way to do IPA" (p. 54). Smith et al. (2009), as well as Smith and Osborn (2008) detailed a general overview of how to conduct an IPA study, and the general guidelines recommended by these authors will be followed. The format for the approach section was guided by Munhall and Chenail (2008), who suggested a flexible outline for qualitative research proposals. They recommended sections for the methodology, including a discussion of the following: aim, sample, setting, gaining access, general steps, human subjects, strengths and limitations, timetable, and feasibility (p. 19). Munhall and Chenail stated that their format is "*suggested*" (p. 5) and they discussed that researchers may need to alter the format to fit the needs of the particular type of study, institutional guidelines, as well as other factors to fit the aim for each qualitative study.

Aim

As detailed in the review of literature, there are still many barriers for SWDs in online learning environments (OLEs). The primary interest of this current study was to gain a better understanding of accessibility in OLEs from the perspective of faculty. Research was conducted to understand the lived experience of faculty within OLEs to determine the current status of accessibility awareness. According to Lamshed et al. (2003), the responsible party for development of OLEs may vary from one school to another, yet it is the faculty who are interacting most frequently with students. This interaction with students puts faculty in an optimal position to spot potential barriers, report accessibility problems, and work with students and other staff to resolve these issues (Lamshed et al., 2003). This current study provided a description of how faculty perceive their role regarding accessibility, how they gain awareness of accessibility policies and practices, what they feel are obstacles and challenges, and who they interact with within their perspective schools regarding these issues. Because faculty are in direct contact with SWDs, they are in an ideal position to provide assistance, to make accommodations, or request help from other staff for needed accommodations.

Participant Selection

Smith et al. (2009) recommended using a "purposive homogeneous sample" for IPA (p. 49), and they suggested that a sample size of between three to six participants would "…provide sufficient cases for the development of meaningful points of similarity and difference between participants…" (p. 51). The sample criteria was faculty in higher education who have experience working in OLEs with students who have print related disabilities as defined by Coombs (2010). The reasoning for this criteria was that these

students are likely to have the most challenges with accessibility in an OLE, since they are likely to require the use of AT to access OLEs (Coombs). Faculty teaching online was defined as those who are actively teaching at least one graduate or undergraduate course that is online at least 80% of the time (Allen & Seaman, 2015). A requirement for participation was that faculty have had experience teaching in an OLE that included at least one student who had a print related disability.

The sample of online faculty was limited to a sub population of faculty who were affiliated with the OLC and ATIA. OLC is a respected leader for online education. In 2012, they "had approximately 300 institutional and 700 individual dues-paying members" (http://onlinelearningconsortium.org/about/history, para. 5), and the 18th International Conference on Online Learning in October of 2012 had more than 1500 onsite attendees and about 1300 online attendees (Venable, 2012). Attendance at this conference grew to 4000 attendees with an equal division between onsite and virtual attendees in 2014 (http://olc.onlinelearningconsortium.org/conference/2015/aln/about, para. 5).

Participants who met the criteria for participation were selected from among contacts made through the OLC organization, ATIA, as well as colleagues, but were limited through their own natural self-selection process in deciding to complete the pre-screening survey and take part in the interviews. The researcher attended the OLC conferences in Orlando from 2012 to 2014, as well as the AHG day workshop at ATIA in January of 2012. This researcher has been attending ATIA each year since 2000, beginning one year after the conference started meeting in Orlando, Florida (http://www.atia.org/i4a/pages/index.cfm?pageID=3681). Participants were recruited

through networking with faculty and staff who are affiliated with OLC, AHG and ATIA once IRB approval was obtained. Recruitment was conducted through personal communication with participants met through contacts made at the onsite conferences, as well as through email requests for participation in this study. An initial screening questionnaire was used to pre-screen participants.

O'Rourke (2011) used an initial screening questionnaire to identify participants eligible for an IPA study and this type of instrument was beneficial to this current study. An initial screening questionnaire was designed to select eligible participants who would be able to contribute meaningfully to this study. Some of the demographic questions from the 29-question survey used by Ortiz et al. (2009) were used as the building blocks for this questionnaire (T. Ortiz, personal communication, October 26, 2010). The revised and shortened questionnaire collected demographic information for faculty to help identify eligible participants. Information that was collected in this screening instrument included: email address, phone number, preferred pseudonym to be used during the interview process, gender, tenure status, years teaching in higher education, years teaching online in higher education, and educational department. Additional questions were added to inquire whether faculty have worked or were currently working with students who had print related disabilities, as well as the classes that they were teaching online at the time.

The initial screening questionnaire, titled, "Online Faculty Accessibility Awareness Screening Questionnaire (OFAASQ)," is available in Appendix B. An online survey tool called SurveyMonkey (http://www.surveymonkey.com) was used to conduct this survey, which was expected to take less than fifteen minutes for each participant. All potential participants received a copy of the "Invitation to Participate and Consent

Information for Participation in the Research Study Entitled Interpretative Phenomenological Analysis of Accessibility Awareness Among Faculty in Online Learning Environments" (Appendix E) or the continuing review approved version if they were recruited after September 3, 2014 (Appendix H). These were sent via email. For those who opted to participate in the pre-screening survey, this information was included in the online survey, with a check box that indicated that the participant consented to participate in the pre-screening survey. This letter indicated that participation was voluntary, that the participants could opt out at any time and provided contact information where participants could ask questions about the study.

Following the pre-screening, participants were invited to be interviewed based on which candidates appeared to have the most meaningful experiences of working with students with print related disabilities in OLEs. Subjects who met the criteria for participation in the study were recruited to participate in the interviews via email and telephone calls following the pre-screening surveys. All participants sent signed copies of their consent forms through the mail and some also sent copies via email. Copies of the signed consent forms were emailed to all participants. Semi-structured interviews were conducted as described in the next section.

General Steps

Semi-Structured Interviews

The interview guide (Appendix C), was designed to answer the research questions using a "semi-structured" model as recommended by Smith et al. (2009), as well as, Smith and Osborn (2008) for IPA studies. The "…interviewer's role in a semi-structured interview is to facilitate and guide, rather than dictate exactly what will happen during the

encounter" (Smith & Osborn, 2008, p. 63). Furthermore, semi-structured interviewing allows for flexible questioning based on "…the participants' responses and the investigator is able to probe interesting and important areas which arise" (Smith & Osborn, 2008, p. 57). Therefore, the list of questions prepared for the interview served as a guide rather than a rigid schedule (Smith & Osborn).

While designing the interview guide, it was important to consider the suggestions of Smith et al. (2009) to include a list of "…between six to ten open-ended questions, along with possible prompts…" (p. 60), which was expected to result in an interview that would last approximately one hour. The interview guide (Appendix C) included six open ended questions that were designed not to lead the participants, but to allow them to share their lived experiences with accessibility in online learning. It was important for this researcher to become familiar with the interview guide in advance and to practice the process with colleagues as a pilot (Smith et al.). This preparation allowed the interviewer "…to concentrate more thoroughly and more confidently on what the respondent was actually saying…" (Smith & Osborn, 2008, p. 59) during the interview. Furthermore, this process was designed to help refine prompts or changes needed to the original interview guide (Smith et al., 2009).

Two participants were selected following the pre-screening survey, who fit the sample prerequisites for participation. These two interviews served as the pilot due to the small proposed sample size of six participants for the primary study. Once the pilot study was complete, analysis was conducted for the transcripts from these first two interviews. This procedure is described in the next sections. The researcher determined that the interview guide questions were not leading and allowed for sufficient details to address

the research questions. The flexible semi-structured interview process allowed for additional prompts as needed during the interviews. The interview guide did not need to be revised prior to continuing on for the remainder of the study. Because of this, the data from the two pilot participants was included along with the primary study.

The researcher then attempted to recruit another six participants who fit the sample prerequisites for the primary study. Although seven more participants completed the pre-screening OFAASQ survey after the initial pilot, only five of those participants followed through and agreed to participate in the interviews. Due to the busy schedules of most of the participants, scheduling interviews often took time.

Prior to each interview, a consent form (Appendix F) or (Appendix I) for participants recruited after September of 2014, was sent to each participant via email. One exception was that this instructor was able to review and sign the consent form with a participant at ATIA 2014. Once each signed consent form was returned, copies were provided to the participants and the interviews were scheduled. Interviews were anticipated to last approximately one to two hours, but not to exceed two hours. The range for the time of the initial interviews rounded up to the nearest minute was 35 minutes to 1 hour and 36 minutes.

Notes were taken during interviews and each interview was audio recorded. No video was used during the interview or in the recordings. The interviews were conducted from a private home office. Since it was not deemed appropriate to make changes to the interview guide following the pilot study, this interview guide remained the same. Verbal consent was obtained at the beginning of each interview as recommended by Smith et al. (2009), who stated that most participants agree to provide this consent for audio

recording. The details of the study and consent information was read out loud and each participant verbally consented to participate in the study. Each interview began with an "…attempt to establish rapport…" (Smith & Osborn, 2008, p. 58) with participants.

The goal of the interviews was to have a dialogue in which the interviewees were able to discuss their experiences with accessibility in OLEs "…with as little prompting from the interviewer as possible" (Smith & Osborn, 2008, p. 61). The interviewer was careful not to lead the participants with too much prompting or interruptions; however, "…a gentle nudge from the interviewer…" in the form of a prompt was used as needed, "…rather than being too explicit" (Smith & Osborn, 2008, p. 61). According to Smith and Osborn (2008), the design of the interview guide should elicit "…answers at both general and more specific levels…" (p. 62). Since the goal was for the interviewer to enter the "…world of the participants…" (Smith & Osborn, 2008, p. 62), follow-up questions and prompts were reactive to the responses of each participant.

Table 1 (Appendix C) lists the six questions of the interview guide and their corresponding research questions. The first question of the interview guide, "What can you tell me about your experiences of working with students with print related disabilities in online learning environments," was a very broad general open-ended question that allowed for descriptive feedback from the participants (Smith & Osborn, 2008). This question and the next three questions were designed to elicit responses to answer the first research question, which is: "How do faculty in OLEs experience encounters regarding accessibility for students who have print related disabilities?"

Questions two through four on the survey addressed the first research question, but allowed for further expansion. These questions were: "What steps were needed to

provide accommodations and accessibility in the online course(s);" "What do you think the student(s) with disabilities thought about the accessibility of the online course(s);" and "How did the experiences of working with student(s) with disabilities compare to working with other students in online courses?" The remaining two questions in the interview guide, questions five and six, focused on research questions two and three respectively.

Question five, which was "Would you please describe any training or skill development that you have participated in that focused on accessibility practices or working with SWDs," was designed to elicit responses relating to the second research question pertaining to how faculty experience the journey of developing the skills needed to provide accessibility for students with print related disabilities. This question prompted the participants to share their experiences of how they learned about accessibility practices, including any personal or business experiences, research, networking, etc. The final question in the interview guide, "Would you please describe the experience of implementing accessibility and accommodations in online courses," allowed participants to share their experiences in response to the research question asking about the aspects of accessibility and UDL that faculty members practice in OLEs, as well as the meaning that they ascribe to the lived experience of providing these accommodations.

Interviews need to be audio recorded for IPA studies (Smith et al., 2009; Smith & Osborn, 2008). The researcher considered options for conducting and recording interviews, and has had experience conducting remote lessons from home using both telephones and Skype for audio conversations. Due to telephone reception issues in this researcher's home office, Skype has been the preferred means for communication and it

has worked very well for audio conversations. Skype audio services have been a consistent method for conducting remote lessons to allow this researcher to communicate with students at a distance from this researcher's home office.

Interviews were conducted using a conference calling service from (www.freeconferencecallhd.com), which allows for audio only recordings sent to Evernote (www.evernote.com) in an MP3 format. Participants were able to use either Skype or a telephone to participate in the interviews, while the researcher accessed the conference call via Skype. The www.freeconferencecallhd.com service allows users to create a dial in telephone number and access code for use with either Skype or a telephone. Regardless of which format participants used, interviews consisted of audio conversations only and video was not used.

After the first interview, this researcher learned of a change in Skype policies in that created an issue for how Skype could be used with third party software, such as freeconferencecallhd.com (https://support.skype.com/en/faq/FA12349/skype-says-my-application-will-stop-working-with-skype-in-december-2013-why-is-that. Skype no longer supports the third party application for freeconferencecallhd.com. Therefore, Skype was unavailable for use for free for participants to call the freeconferencecallhd.com Skype username for the interviews. However, participants were still able to use freeconferencecallhd.com from a phone for free if they had free long distance, but a paid account from Skype was needed to call the dial-in telephone number. To resolve this issue, this researcher created a paid account to be used for the purposes of this study and offered the username and password to participants if they did not have free long distance service on their phone services. All participants were able to login using

freeconferencecallhd.com without any issues except for one. The second pilot participant, who did not have free long distance on her phone, had difficulty logging into the Skype account, so this researcher only used Skype to call her directly without using freeconferencecallhd.com.

Research notes were taken by the researcher during the interview, yet the audio recording allowed the researcher to focus on the interview and establishing rapport with the participant without having to frantically write down each word (Smith et al., 2009). Furthermore, for the level of data analysis needed for IPA, a complete text transcript was necessary and it was not possible to create a complete transcript without using a recording device (Smith et al.). In a recent IPA study, Cooper, Fleischer, and Cotton (2012) used a similar online recorder, (www.freeconferencecall.com). The version that was used for this study, (www.freeconferencecallhd.com), allows for high definition audio. Additionally, Callnote (http://shop.skype.com/apps/Call-recording-audio-only/Callnote.html), an app for Skype, was used to record interviews. This researcher tested both of these recording tools before and after the policy changes to Skype dealing with third party applications, and they functioned simultaneously without any issues. There was no issue with this service working to record calls for the backup recordings for all but one participant. This duplicate recording method was used, as it allowed for a backup recording in case of a technology malfunction. Only the second pilot participant did not have a backup audio recording for the interviews. The consequence of calling her from Skype directly on her phone meant that we were unable to use the recording feature from freeconferencecallhd.com. Therefore, only CallNote was used to record the interviews for this participant. Fortunately, the recording quality for the interviews was

very good, so backups were not needed. Audio files were stored on a password protected computer, as well as a password protected back up hard drive. The password to these devices was and is only known to the primary researcher.

Reflexive Bracketing and Journaling

Reflexive bracketing, also known as epoché, a principal technique of IPA, was defined by Moustakas (as cited in Creswell, 2007, p. 235) as "the process of data analysis in which the researcher sets aside, as far as is humanly possible, all preconceived experiences to best understand the experiences of participants in the study." However, Smith et al. (2009) stated that, "…one will not necessarily be aware of all one's preconceptions in advance of the reading, and so reflective practices, and a cyclical approach to bracketing, are required" (p. 35). Chenail (2011) recommended using a research journal to track decisions made throughout the qualitative research process, so that they can be reviewed for "…effectiveness and coherence…" (p. 1722). A reflexive journal, recommended by Smith et al. (2009), was used for the duration of this IPA research study. Roulston (2010) suggested that a reflexive journal is a tool for the researcher to consider "…reflections, ideas, commentaries, and memos throughout the research process" (p. 121). This researcher has used Microsoft OneNote© to maintain a research journal to record thoughts, decisions, and ideas related to this research.

Data Organization and Analysis

For IPA analysis, only verbal utterances are transcribed (Smith & Osborn, 2008). The audio recordings for the interviews was transcribed by a professional transcription service, Scriptosphere (http://www.scriptosphere.com). However, there was still a need for interpretation by the researcher, according to Smith and Osborn (2008), so during the

first reading of the interviews, the researcher listened to the audio recordings simultaneously and made needed corrections. After reading through the interviews once, the transcriptions were reviewed with each respective participant to confirm accuracy as a means for triangulation. Next, NVivo (http://www.qsrinternational.com), which is a qualitative research software tool, was used for coding and analysis. This software allowed for the creation of codes, as well as themes for qualitative research.

The pilot interviews were transcribed and analyzed for needed modifications to the interview guide, prior to moving on to the primary interviews. Each additional interview recording was sent to a transcription service. Following the analysis of the pilot interviews and each additional transcript, considerations were made for changes needed to the interview process (Smith & Osborn, 2008). Although a transcription service was used to create initial transcripts; as editing was needed, the NVivo software was used. After reading each transcript several times, Smith and Osborn (2008) recommended "…the left-hand margin being used to annotate what is interesting or significant about what the respondent said" (p. 67), and the right-hand margin to "…document emerging theme titles" (p. 68). NVivo was used to take notes within each transcript in a similar manner, but advanced coding and thematic tools built into the NVivo software were used rather than using the left and right margins. Initial comments were rephrased into shortened expressions and themes to "…capture the essential quality of what was found in the text" (Smith & Osborn, 2008, p. 68). The first transcript took several weeks to analyze, as expected by (Smith et al., 2009), but subsequent analyses took less time.

Once all transcripts were analyzed in this manner, Smith and Osborn (2008) recommended that the next step is to list "emergent themes" and search for connections

between these themes. At first, the list of themes was chronological, as they came up in each transcript, but the next step included an analytical reorganization to assist the researcher in connecting the themes (Smith & Osborn, 2008). Themes were then compiled into broader emergent themes with coding represented from the original transcripts (Smith & Osborn). The purpose of this analysis was to find "convergences" and divergences" in the data "recognizing ways in which accounts from participants were similar but also different" (Smith & Osborn, p. 73). Once the analysis was completed for all interviews, the researcher compiled the analysis into the results section, which provided a "narrative account" discussing the themes associated with accessibility awareness among participants.

Format for Presentation of Results

The results of the analysis were presented in a narrative format that is consistent with the qualitative approach of IPA. Tables and figures were used as appropriate to support the narrative description of the results. Smith et al. (2009) recommended that researchers provide careful detail for each step of the study from participant selection through to final analysis. The researcher provided a thorough discussion of each stage of the study in the results section, and this includes quotes from the research journal to clarify the decision making process. Smith et al. recommended using quotes from participants to support the themes drawn from the analysis. The researcher followed the recommendations of Smith et al., who stated that IPA results are written in a format that makes it evident to the reader that they "…are positioned as attempting to make sense of the researcher trying to make sense of the participant's experience" (p. 190). Finally, the

results focused on providing information that is "interesting, important or useful" (p. 191) to the reader as recommended by Smith et al. (2009) for IPA.

Quality Control

Chenail (2009) discussed the importance of conducting a pilot study and the advantages of this technique. The pilot study allowed for the researcher to assess bias issues, request feedback for vague questions, determine the time needed for the interview and adjust accordingly, and refine the interview guide (Chenail). The pilot interviews served this requirement for quality control. Procedures were used to bracket researcher bias in the interview guide, as well as the actual interviews (Smith et al., 2009). After each interview was transcribed, quality control measures included triangulation procedures to confirm data, as recommended by Creswell (2007). This included a process of reviewing the transcripts with each participant to ensure accuracy, as well as to resolve unanswered questions. After each interview was analyzed, the interview guide was considered for needed revisions. Furthermore, follow-up interviews were scheduled to fill in any gaps or to ask additional questions.

IRB Considerations and Human Subjects

Extensive measures were taken to ensure the confidentiality of all participants, and to follow all IRB protocols and mandates. The informed consent procedure outlined by the Office for Human Research Protections (OHRP) and the Nova Southeastern University Institutional Review Board (IRB) was followed. Approval from the IRB was obtained at the expedited level (Appendix D) and continuing review was approved in September, 2014 (Appendix G). There were minimum risks and there were no direct benefits to study participants. Since the participants were faculty teaching in OLEs within

higher education, "vulnerable" populations defined by the OHRP (2009) were not targeted. Two risks of this study included the possibility of disclosure of non-compliance information or other confidential data, as well as loss of time.

To protect the confidentiality of participants, the researcher used pseudonyms for participants in both interviews and comments "…as this allows the reader to follow the story of each individual through the analysis" (Smith et al., 2009, p. 110). Additionally, all data was secured with password protection known only to the researcher as recommended by Cooper et al. (2012). The consent forms with the full names of participants were kept in a locked filing cabinet available only to the researcher. A secure computer with password protection only known to the researcher was used, as well as a backup hard drive with comparable security protection. After a three year period following the completion of the study, all data will be destroyed (Smith et al., 2009) in a timely manner according to IRB guidelines. Data destruction will include a full wipe of the hard drives used to store study related data and recorded interviews. Only pseudonyms and non-identifying data were used in the final report. All information obtained in this study was strictly confidential unless disclosure is required by law. Also, the Institutional Review Board at Nova Southeastern University and Dr. Laurie Dringus may review research records.

Loss of time was another possible risk. The estimated time involved for each participant in the study was three hours and fifteen minutes. This included approximately 15 minutes for the pre-screening survey, up to two hours for the initial interview, and up to one hour for the follow-up interview. All measures were taken to adhere to the time limitations to respect the needs of the participants. It was expected that it would be likely

that less time was needed and a time frame of one to two hours was estimated for the initial interview, as well as an estimated time frame of 30 minutes to one hour for the follow-up interview. The average length of time for all participants for both interviews was one hour, thirty-nine minutes and twenty-eight seconds.

This study posed minimal risk to participants and had the potential for much greater benefits to understanding how online faculty experience accessibility awareness and implementation. The primary risk of this study was a breach of confidentiality. All measures were taken as described to prevent such a breach. However, the potential for understanding accessibility awareness has led to recommendations to improve faculty awareness of accessibility in higher education. Improving faculty awareness of accessibility is expected to impact the accessibility of OLEs in the future, which is also expected to optimistically create a more accessible atmosphere for students with print related disabilities.

Now that the analysis has been completed, all data will be destroyed (Smith et al., 2009) in a timely manner according to IRB guidelines after a three year period. Data destruction will include a full wipe of the hard drives used to store study related data and recorded interviews. All backup drives with identifying information were used solely for the purpose of this study. The memory of each of these drives will be wiped after the minimum of three years has passed using software, such as Eraser (http://eraser.heidi.ie/). If Eraser is unavailable, comparable software will be used to destroy all identifying data relating to this study.

Resources and Feasibility

The following resources were needed:

1. Access was necessary to members of Sloan-C, now OLC, as well as ATIA conference attendance and email lists. A small sample was needed.
2. A subscription was needed for SurveyMonkey (http://www.surveymonkey.com) for the OFAASQ (Appendix B). Although the free service would likely have met the requirements for the number of questions and responses, the "Basic Features +" plan includes enhanced security with SSL/HTTPS, as well as the ability to export data to an Excel or PDF document and was available on a month-by-month basis. (http://www.surveymonkey.com/pricing/?ut_source=header).
3. Recording devices needed for interviews included an account to www.freeconferencecallhd.com; as well as Callnote (http://shop.skype.com/apps/Call-recording-audio-only/Callnote.html), a Skype App capable of recording the interview conversations.
4. A transcription service was used to transcribe the interviews. The third party transcriber did not have access to participants' confidential information, since pseudonyms were used during the interviews. Scriptosphere, the transcription agency that was used for transcription of interviews provided a non-disclosure agreement (NDA), (http://www.scriptosphere.com/privacy.htm). This agency was used for transcription services.
5. Access to NVivo software (www.qsrinternational.com/products_nvivo.aspx) was needed for data analysis. This tool was used to import audio interviews, edit transcriptions of interviews, code transcriptions, and analyze the data using the

IPA methodology. The full version of this software was available to students at a discounted price and the Graduate School of Computer and Information Sciences at Nova Southeastern University had a site license available to one individual at a time for students and faculty. An individual student license was obtained for this software.

6. A secure and private home office location was needed for both interviews and transcription activities.
7. Ongoing access to Microsoft OneNote was needed for access to this researcher's reflexive research journal.
8. A secure computer with password protection only known to the researcher was needed, as well as a backup hard drive with comparable security protection.
9. A paid account for Skype was needed for participants who did not have a phone with free long distance for use with freeconferencecallhd.com. An account was created solely for the purpose of this study.

The first interview was conducted on March 17, 2014 and the final interview was scheduled exactly one year later on March 17, 2015. A timetable of approximately one year was expected for this study. During the October, 2012 Sloan-C Conference, this researcher made contact with numerous OLE faculty and staff throughout who were affiliated with many different schools of higher education. Furthermore, at the 2012 Assistive Technology Industry Association (ATIA) (www.atia.org), this researcher participated in a day long workshop sponsored by a cohort from Accessing Higher Ground (AHG) (www.accessinghigherground.org). Tentative discussion at these conferences led this researcher to believe that there were quite a large number of faculty

who would be interested in participating. These talks with faculty and staff at Sloan-C and with those affiliated with AHG further solidified the need for research to assess faculty awareness of accessibility in OLEs.

Summary

This chapter discussed the qualitative approach of IPA as it was used to answer the research questions, and to explore the lived experiences of online faculty who have worked with students who have print related disabilities in OLEs. An interview guide with six questions was used to address the research questions. After conducting and analyzing two initial pilot interviews, it was determined that no adjustments were needed to the interview guide. Participants were recruited from networking conducted at the Sloan-C, now OLC and ATIA conferences, and they were invited to take part in this study via email correspondence using the approved Participation Letter (Appendix E). The OFAASQ survey was sent via email to prescreen potential candidates for participation. Next, the researcher selected 6 participants, 5 of which participated in semi-structured phenomenological interviews. The researcher used an interview guide (Appendix C) and interviews were recorded and professionally transcribed verbatim. The transcripts were analyzed to determine emergent themes, discussed in Chapter 3. Quality control measures appropriate for qualitative research and IPA were used.

Chapter 4

Results

Introduction

The purpose of this study was to describe how online faculty gain knowledge regarding accessibility, to explore the lived experiences of online faculty who have worked with students who have disabilities, and to gain a better understanding of how faculty experience the process of accessibility implementation. The researcher sought to understand the essence of accessibility awareness among faculty who work with SWDs, and to describe the experiences of how they gain awareness and implement accessibility within OLEs. Transcripts of the semi-structured interviews were analyzed and divided into eight super-ordinate themes. The following three research questions guided this study:

RQ1. How do faculty in OLEs experience encounters regarding accessibility for students who have print related disabilities?

RQ2. How do faculty in OLEs experience the journey of developing the skills needed to provide accessibility for students with print related disabilities?

RQ3. What aspects of accessibility and UDL do faculty members practice in OLEs and what meaning do they ascribe to the lived experience of providing these accommodations?

In Chapter 3, the approach of this study was described and included the aim, participant selection, general steps IRB considerations for human subjects, as well as resources and feasibility. In Chapter 4, the researcher provides the results of the analysis. Smith et al. (2009) stated that the results section is an integral component of an IPA study because this is where the researcher provides details of the extensive analysis of the lived experiences of participants. According to Smith et al., the researcher's description in this section is "…the only entrée the reader has to the lived experiences of the participant…" (p. 109).

Prior to writing this section, as recommended by Smith et al., a table of the themes was created to provide a general overview of the analysis. This table, titled "Node Classifications," is available in Appendix K. Extracts from participants were used in this section to illustrate each theme, as recommended by Smith et al., to allow for "…a clear and full narrative account…" (p. 110) that provided transparent evidence of each theme. Munhall and Chenail (2008), stated that the results section of phenomenological studies often vary, yet may include sections with descriptions of themes, experiences, relationships among themes and experiences, as well as a review of other sources (p. 47).

Chapter 4 presents the lived experiences of faculty who teach online who have had experiences working with students with print related disabilities. A narrative account is presented. This chapter provides a thorough analysis of the data collection methods, coding methods, development of themes and super-ordinate themes, as well as findings.

Data Analysis

The data analysis was based on the interpretative phenomenological analysis (IPA) approach as recommended by Smith et al. (2009). The process included the

following: Recruiting participants from a homogenous sample of faculty who teach online and have worked with at least one student with a print related disability, obtaining verbatim transcripts of interviews, reviewing transcripts for needed changes by both the researcher and respective participants, coding the transcripts using nodes in NVivo, and using annotations as necessary. The development of emergent themes led to the compilation of eight super-ordinate themes. The remainder of this chapter presents a narrative discussion of this process.

Demographic Data

The participants recruited for this study, for both the pre-screening OFAASQ survey and the interviews, represented faculty who teach online in higher education from various states within the USA who have experience working with at least one student with a print related disability in an online course. They were recruited through contacts made at the conferences for ATIA, OLC as well as through colleagues. While many of the contacts made through these conferences were potential participants who met the requirements for participation; others were administrators, instructional designers, or other professionals who agreed to forward the invitation to eligible participants within their institutions.

As depicted in table 4.1, a total of 89 invitations were sent by the researcher. Although nine participants completed the pre-screening survey, two of these participants were unavailable to partake in the interviews. Of the participants who completed the interviews, four of the participants were recruited through the Sloan-C/OLC conference, while two participants were recruited through ATIA, and one was recruited through a colleague. Participants who completed the pre-screening survey identified a total of six

states as the primary location where they teach online and five of these states were represented in the final sample of participants who participated in the interviews. However, it is important to note that several of the participants stated that they teach for more than one school and they represented more than one state.

Table 4.1. Participant Recruitment

Sample Method	Invitations Sent by Researcher	Pre-Screening Surveys completed	Number of participants who completed interviews
Met at ATIA	22	1	1
Snowball (ATIA)	11	1	1
Met at SLOAN/OLC	43	3	2
Snowball (SLOAN/OLC)	9	2	2
Met through Colleagues	4	2	1
Total	89	9	7

Additional demographic data was collected during the pre-screening OFAASQ survey and during the interview process. Appendix L includes the demographics data from the OFAASQ pre-screening survey for participants who completed the interview process with the order of participants from top to bottom of when they completed the survey with the first participant at the top of the table. Of the seven participants, five were female and two were male. Regarding the years teaching in higher education: One participant had 0 to 5 years of experience; three stated that they had between 6 and 10 years of experience; two stated that they had 11 to 15 years of experience and one stated that she had 16 to 20 years of experience. When asked how many years of experience that they had teaching online: Two stated that they had 1 to 3 years of experience; three stated that they had 4 to 9 years of experience; one stated that he had 10 to 15 years of experience; and one stated that she had 15 or more years of experience. Regarding the

role at the primary college or university where participants teach online: Four stated that they were non-tenured faculty; two stated that they were tenured faculty and one identified that she was professional faculty. Additionally, one faculty stated that she was also an adjunct instructor.

The primary departments where faculty teach were Education, Arts and Humanities, English, college preparatory programs, Psychology, Rehabilitation Counseling, and Special Education. The range of courses that participants were currently teaching at the time of the pre-screening survey included braille, research, college preparatory classes, English courses, leadership, applied social psychology, rehabilitation counseling courses, and AT courses. Other data collected during the pre-screening survey included experience with PWDs as presented in Appendix M with the order of participants from top to bottom of when they completed the survey with the first participant at the top of the table. This section also includes a description of participants from three categories: pilot participants, participants who have an emphasis on accessibility, AT or working with PWDs, and participants from other content areas.

Pilot Study

The pilot participants' chosen pseudonyms were Noval and Joan. Both of these participants were females who identified as non-tenured faculty with 6 to 10 years of experience teaching in higher education and 4 to 9 years of experience teaching online. At the time of the survey and interviews, the courses that these participants were teaching online included college preparatory classes, braille, and research. Noval indicated that she had experience teaching online with one student with an upper body motor impairment and three students with learning disabilities. Joan listed that she had experience teaching

online with eight students with visual impairments, one student with a hearing impairment and four students with SLDs. However, through personal correspondence and discussions during the interview, Joan stated that due to issues with SWDs not disclosing that they have disabilities, these numbers were only a best guess.

In the final section of the OFAASQ pre-screening survey (Appendix B), were questions asking participants about their experience with PWDs. Neither pilot participant reported that they had a disability nor that they had family members who had a disability. Joan reported that she had one or more friends and/or acquaintances who had disabilities, as well as one or more colleagues with a disability, while Noval answered no to all four of these questions.

After analysis of the pilot interviews, the researcher determined that the interview guide allowed for sufficient questions and prompts for dialog with participants to describe their lived experiences with details to answer the research questions. Since this researcher was new to qualitative research, each subsequent interview allowed for further honing of interviewing skills and open-ended prompts responding to participants accounts. The researcher prompted participants to help ensure that all aspects of the research questions were answered. Once the transcripts were reviewed for the initial interviews, additional prompts and questions were determined for follow-up interviews with each participant based on their responses in the initial interview. This was unique for all participants.

Participant Categories

One unanticipated outcome of the recruitment process was that almost half of interview participants worked within fields that had an emphasis on accessibility, AT or

working with PWDs. Three of the seven participants worked within these fields and there were some notable differences in their perspectives and experiences pertaining to accessibility, as well as working with SWDs. Therefore, participants have been divided into two categories: Participants who have an emphasis on accessibility, AT, or working with PWDs; and participants from other content areas. Of the two pilot participants, they were split with one in each of these categories.

The chosen pseudonyms of the four participants who were included within the category of participants from other content areas were Noval, Catherine, Gieuseppi, and Bob. The demographic information for Noval has already been provided within the section describing pilot participants. Catherine identified as a female tenured faculty member teaching in the English department with 6 to 10 years of experience teaching in higher education and 4 to 9 years of experience teaching online. Gieuseppi described himself as non-tenured faculty in a college preparatory department with 0 to 5 years teaching in higher education and 1 to 3 years teaching online. The precise names of the department and classes have been de-identified to safeguard confidentiality. Bob described himself as non-tenured faculty in the psychology department with 11 to 15 years teaching in higher education and 10 to 15 years teaching online. He had the second highest amount of experience in both of these categories. The pseudonym that was originally chosen by Bob was part of his full name, so we agreed to change it to protect his identity. He chose this new pseudonym during his initial interview. At the time of the survey and interviews, these participants were teaching courses online in the following areas: Leadership, applied social psychology, college preparatory classes and English. The exact title of the courses were not included for confidentiality purposes.

Catherine indicated that she had experience teaching online with ten students with SLDs. Although Gieuseppi originally stated in the survey that he only worked with one student with a visual impairment, during the interviews he revealed that he worked with two students with visual impairments in online classes. Bob stated that he had experience teaching online with 5 students with SLDs. The total number of students with print related disabilities that participants in this category reported having experience with was 21 with an average of 5 students per participant.

In the section pertaining to their experience with PWDs, all four participants in this category, Noval, Catherine, Gieuseppi, and Bob answered "no" to the questions asking if they had a disability or family members who had a disability. Catherine and Bob answered "yes" to the question asking if they had one or more friends or acquaintances who have a disability. Bob was the only participant in this category to report that he had experience working with one or more colleagues who have a disability. There was only a total of three "yes" responses to these four questions pertaining to experiences with PWDs (self, friends, family, acquaintances or colleagues with disabilities) for all four participants in this category. From the 16 possible responses there was an 18.8% affirmative response rate for experiences with PWDs.

The chosen pseudonyms of the three participants who were included within the category of participants who have an emphasis on accessibility, AT, or working with PWDs were Joan, Heather, and Sloan. The demographic information for Joan has already been provided in the section discussing pilot participants. Heather identified as a female professional faculty member teaching in the special education department with 11 to 15 years of experience teaching in higher education and 1 to 3 years of experience teaching

online. Sloan described herself as tenured faculty in the rehabilitation counseling department with 16 to 20 years teaching in higher education and 15 or more years teaching online. Furthermore, Sloan stated that she teaches one online course each year and was currently in the planning stages preparing for the next iteration of this course. At the time of the survey and interviews, the courses that these participants were teaching online included rehabilitation counseling and AT courses. The exact title of the courses were not included for confidentiality purposes.

Heather indicated that she had experience teaching online with two students with visual impairments and one student with SLDs. Sloan stated that she had experience teaching online with 10 students with visual impairments, 8 students with upper body motor impairments, 10 students with hearing impairments and 20 students with SLDs. Of those who participated in the interviews, Sloan was the only interview participant to report that she had experience with SWDs in all four categories and had the most experience with SWDs in each of these four categories. The total number of students with print related disabilities that participants in this category reported having experience with was 64 with an average of 21 students per participant. This was significantly higher than participants from other content areas.

In the section pertaining to their experience with PWDs, Heather and Sloan answered either “yes” or declined to answer these questions. Heather was the only participant in the study who stated that she had a disability, and Sloan declined to answer this question. Sloan stated that she had one or more family members who had a disability and one or more friends and/or acquaintances who have a disability, while Heather declined to answer these two questions. All three participants in this category, Joan,

Heather, and Sloan stated that they have worked with one or more colleagues who have a disability. There was a total of seven "yes" responses to these four questions pertaining to experiences with PWDs (self, friends, family, acquaintances or colleagues with disabilities) for all three participants in this category. From a total of 12 possible responses, there was a 58.3% affirmative response rate for experiences with PWDs. Overall, participants in this category had a much greater amount of experience with PWDs. They reported a greater amount of experience with SWDs online, as well as with family, friends, acquaintances and colleagues who have disabilities. This may explain some of the differences between the reported experiences of participants within this category and participants from other content areas in terms of their knowledge, awareness, and implementation of accessibility as they worked with SWDs.

Interviews

Semi-structured interviews were conducted with 6 participants using the audio only features of Skype and freeconferencecallhd.com. As was already mentioned, one participant, Joan, had difficulty logging into Skype and freeconferencecallhd.com, so the researcher called her directly from Skype. Table 4.2 helps to illustrate the participant categories, dates of interviews, length of time for the initial and follow-up interviews, in addition to the total interview time for each participant. The length of the initial interviews rounded up to the nearest minute ranged from 35 minutes to 1 hour and 36 minutes. Furthermore, the length of time for follow-up interviews rounded up to the nearest minute ranged from 17 minutes to 41 minutes. The three longest initial interviews were from Joan, Heather, and Sloan, who were all in the category of participants who have an emphasis on accessibility, AT or working with PWDs.

Table 4.2. Interview lengths, dates and participant categories (H:MM:SS).

Participant	Category: Does the participant's content area have an emphasis on accessibility, AT or working with PWDs	Date of first interview	Date of follow-up interview	Initial Interview	Follow-up Interview	Total Time
Sloan	Yes	2/27/2015	3/17/2015	1:23:44	0:41:07	1:52:39
Heather	Yes	2/23/2015	3/10/2015	1:36:07	0:32:28	2:03:01
Bob	No	1/8/2015	1/26/2015	0:34:36	0:19:26	0:54:02
Catherine	No	2/6/2015	3/6/2015	0:53:47	0:25:07	1:14:16
Gieuseppi	No	1/15/2015	2/2/2015	0:57:30	0:16:46	1:18:54
Joan	Yes	4/29/2014	6/3/2014	1:36:13	0:26:48	2:08:35
Noval	No	3/17/2014	4/14/2014	1:12:15	0:40:24	2:04:51
Average				1:10:36	0:28:52	1:39:28

The average total interview length for these three participants for both the initial and follow-up interviews was 2 hours and 5 minutes, while participants who work in other content areas averaged a total interview length time of 1 hour and 20 minutes. The longer interview times for those working from within fields specializing in working with PWDs may be due to those participants having more experience with SWDs and PWDs in general. One demographic area that had a noticeably different interview length was the two male participants, who were listed among the three shortest interview lengths for the entire study. Of those in the category of participants working in other content areas, the three shortest interview lengths were among these participants for Bob, Catherine, and Gieuseppi respectively. The fourth person in this category, Noval, who was the first pilot participant, had the second longest total interview length.

One delay during the study occurred due to scheduling issues for participants. Of the 14 total interviews, 6 were rescheduled due to participant scheduling conflicts, illnesses or other reasons. Two participants had to reschedule both their initial and follow-up interviews and two other participants had to reschedule one of their interviews. Due to busy schedules and travel, several of the participants had to delay their participation in the interviews for two or more months.

Transcription

Scriptosphere (http://www.scriptosphere.com) was used as a third-party transcription service to transcribe all interviews. Following each interview, the researcher listened to a brief audio clip from the audio recordings from freeconferencecallhd.com and CallNote. In all instances, the recording from CallNote was deemed to be of higher quality and sent immediately to Scriptosphere via their online upload service website. For Joan, only the recordings from CallNote were available for both interviews due to login issues with the Skype account created for the purposes of this study to allow for free calling to freeconferencecallhd.com.

On average, it took 6 days to receive transcripts from Scriptosphere once they received the interviews with a return rate range from 2 to 10 days. Once the transcriptions were returned, they were compared to the original audio files for accuracy by the researcher. The edited transcripts were sent via email to each participant for review. During the follow-up interviews, we discussed areas that needed to be revised. Minor changes, clarifications, and additions were requested by participants. In some cases, participants sent details about their programs of study via email or responded during the interviews to add more specific details about our conversations. After the follow-up

interview transcripts were sent to participants, none of the participants responded that changes were needed to the transcripts. Perhaps this was due to the thoroughness of the lengthy interview process and having additional time to review questions with participants during the follow-up interviews.

Data Coding

Once participants reviewed their transcripts and editing was complete, these were imported into NVivo 10 for analysis. Participant demographic data were also imported into NVivo from participant survey responses and added as classifications for participants. This allowed for comparison of data from within the nodes and emerging themes. Prior and during to the coding process, transcripts were read and re-read several times and editing changes were made as needed, as well as to protect the confidentiality of participants through de-identification. Numerous statements that the researcher believed could possibly be used to identify participants were removed or revised into more general terms for this purpose. In addition to listening to the audio transcripts during initial editing prior to sending these to participants for review, the researcher listened to each interview at least one more time in full and then in shorter clips as needed for clarification and understanding of participant tone during the coding process.

Coding was conducted from within each transcript and the researcher did not attempt to form emergent themes until after the first two pilot interviews were complete. At that point, the researcher reviewed the nodes to begin combining more specific nodes into broader emergent themes. Annotations were used to detail analytical questions and research notes throughout the coding process. During subsequent analysis and coding, the researcher made all attempts to review each transcript without bias as a singular body.

However, where appropriate, coding was added to existing nodes. The coding process was quite extensive and resulted in eight super-ordinate themes with 44 sub-ordinate themes (Appendix K).

Journaling and Bracketing

A reflexive journal was used throughout this study, as recommended by Smith et al. (2009) to bracket bias and record thoughts, decisions, ideas, experiences and research notes related to the phenomenon of accessibility awareness and implementation among online faculty. This journal was maintained in Microsoft OneNote©. Although the journal was used throughout the entire research process beginning in the early stages of idea paper development in 2012, a new section was created once the researcher had received committee and IRB approval for the Dissertation Proposal. For the 20 months from October, 2013 through June, 2015 there were 56 entries with over 6700 words. This research journal documented the researcher's journey throughout the study. An early journal entry, prior to the pilot interviews, discussed the researcher's process of bracketing:

> "As I consider how to best continue bracketing during interviews, one thing that occurred to me is that the shear fact that I am conducting this study likely implies to my participants that I am very interested and concerned about accessibility in online courses. It will be important to continue working to ensure that I am helping my participants feel at ease while they discuss their experiences in this area. I want to be careful that they do not feel that I am judging them. I want to make sure that they feel comfortable expressing their experiences, both positive and negative."

In some of the later journal entries, the researcher considered thoughts and recommendations after reflecting on interviews. An interesting theme that emerged during this study, due to differences between participants who teach courses within

programs that have an emphasis on accessibility, AT or working with PWDs and faculty in other content areas. One such journal entry that reflected this discovery:

> "While coding the transcript for Heather, some thoughts occurred. Although faculty in certain programs that have an emphasis on working with people with disabilities have an awareness of the need for accessibility, they may not have the expertise to create accessible content. If faculty who specialize in working with people with certain types of disabilities are not able to create accessible content, how can the average faculty member, who does not work in the field of accessibility or with people with disabilities be expected to know how to create accessible content? This is an indication that there needs to be a collaboration and support for faculty to help them create accessible materials."

The researcher continued journaling throughout the research reporting process. As this researcher looked back on the journey of this study and the interview process, it is evident that this has had an impact on how she perceives accessibility awareness and implementation among online faculty. One of the newest journal entries, written after the completion of analysis stated:

> "I have always considered myself to be an advocate for PWDs in terms of teaching assistive technology, but now I am taking a much larger interest in accessibility awareness, not just for online faculty, but in my own professional associations. In fact, this has led to the development of accessibility trainings for staff at my workplace."

Review of Data Collection Method

This researcher explored and analyzed additional resources in addition to works cited in the references section, which included numerous IPA studies and dissertations, as well as peer-reviewed articles. These were used to consider best practices to prepare for, conduct and write a qualitative IPA report. Several resources for best practices for conducting qualitative and IPA interviews were incorporated, including Smith et al. (2009), Smith and Osborn (2008), Creswell (2007) and Roulston (2010).

The use of audio conferencing through Skype and freeconferencecallhd.com allowed for the researcher to take note of tone, pauses and other non-verbal cues, such as laughter or sounds of exasperation, during the interviews. The majority of participants used a telephone on their end to participate in the freeconferencecallhd.com conferencing service. However, this researcher used Skype to initiate all interview conversations. Although notes were taken during interviews, the use of audio recordings allowed the researcher to focus on the conversations with participants rather than trying to frantically write down every word verbatim.

Findings

In Chapter 4, this researcher uses IPA to present emergent themes that developed during the analysis of the 14 interview transcripts, including the 7 initial semi-structured interviews and the 7 follow-up interviews. Eight super-ordinate themes emerged from this study:

1. Accessibility and usability awareness of online faculty
2. Interactions and relationships between faculty, students, various departments, and outside organizations relating to SWDs and accessibility
3. Different perspectives and experiences of faculty who teach courses within programs that have an emphasis on accessibility, AT, or working with people with disabilities
4. Faculty experiences and perspectives of working with SWDs and providing accessible materials in OLEs
5. Faculty training and experience with accessibility and people with disabilities
6. Faculty autonomy within OLEs as it relates to creating accessible content

7. Accommodations and accessibility features used in OLEs

8. LMS accessibility and usability

Heather made a comment that not only encapsulates the importance of this study, but truly sheds light on the need for universal design in all areas of education:

> "…realizing that any one of us can be in that spot [laughter] on any day. And, you know, that's why it matters [laughter] because you still want to be able to access whatever it is that you want to access, and don't want to be excluded from it, just simply because somebody didn't take the time to create it in a way that is accessible."

A statement from Joan exemplifies the need for this study, as well as the importance of improving the accessibility awareness of online faculty to decrease the awareness gap:

> "I think in general, continuing to remind people about universal access and universal design for these courses, because you don't know who's going to be taking them, is just a -- is a really good practice, so that's why I'm really happy to hear that you're doing this study and look forward to finding out what -- the results, because I do think that there's an awareness gap."

Joan's statement illustrates that it is important to continue to bring up issues about universal design for learning and accessibility in OLEs. Another participant, Sloan, was discussing her role with implementing accommodations for SWDs and described critical concepts for faculty to understand to better assist SWDs to feel more comfortable to disclose their disabilities in online courses. She gave an example of what she would say to SWDs to encourage them to seek out needed services:

> "…do whatever you need to do to jump through the hoops to be successful in graduate school. It's not about, you know -- hopefully, it's not about discrimination or perception, but your goal is to be successful. And if you've got this available to you, you know, run with it."

Both Joan and Sloan work within fields that have an emphasis on accessibility, or working with PWDs. Noval, on the other hand, teaches within other content areas, primarily for college preparatory courses. A statement from her initial interview

demonstrates the need for training and awareness for online faculty within the areas of accessibility and providing accommodations for SWDs: “There isn't any training that I've ever had about this. It usually comes down in a quick meeting. ‘By the way, if you encounter anybody, give them this number or an email.’ That's it.” While these statements are provided for an introductory view into the perspectives and experiences of the participants, further exploration is provided in detail within these next sections.

Data Visualization

The researcher used NVivo to create a variety of visualizations to explore the frequency of words used most often within coded nodes. To avoid emphasizing common words and to narrow the visualization into a clear and legible graphic, the top 50 words were used, and it included words that were 5 letters or longer. Furthermore, the word list was narrowed to combine synonyms to avoid duplication of stemmed words and words with similar meanings. The term “laughter” was used during the transcription process to denote actual laughter during the interviews and this term came up quite frequently. Since this was not actually a spoken word during the interviews, it was included in the “stop words” list within NVivo to preclude it from being included in the word cloud visualization shown in Figure 4.1.

There were 540 instances from within coded nodes for the most common word, which was the word “student” or similar words, such as “students” and “students’.” This is significant and it may be have an implication that the faculty participants were student focused throughout our interviews. The second most common word, with 408 instances, was “think.” This included synonyms, such as believe, consider, imagine, guess, meaning, recall, and remember. In a study focusing on academic participants, as well as

for an IPA study in general, this is fitting to explain how participants' were trying to make sense of their experiences. The third most frequent word was "going" and there were 363 instances of this word or synonyms, including: become, getting, offered, starting, and working. This action word implies that the participants were discussing how things were moving along and progressing during their experiences. The fourth most frequent word was not a surprise due to the topic of our interview discussions. There were 339 instances of the word "disability," including stemmed version of this word and the word "impairment." Some of the other heavily weighted words, included "class" with

Figure 4.1. Word Cloud Based on NVivo Analysis of Coded Nodes

328 instances, “learning” with 281 instances, “really” with 244 instances, “getting” with 239 instances, “taking” with 191 instances and “accessible” with 189 instances. Along with their respective synonyms, these were among the top 10 most frequent words.

Super-Ordinate Themes

During the semi-structured interviews, this researcher made all attempts to help participants feel at ease to discuss their experiences with accessibility, accommodations and SWDs in OLEs. From the initial coding completed in the pilot study to the final coding and analysis following all completed interviews, the codes were revised, condensed, altered, moved and combined into broader themes. Eventually, all themes were merged into the 8 super-ordinate themes discussed in this report. The following narrative details the iterative process, as recommended by Smith et al. (2009), of the researcher attempting to make sense of the participants attempting to make sense of their own experiences with accessibility and SWDs in OLEs.

Accessibility and Usability Awareness of Online Faculty

There are two sub-ordinate themes within the super-ordinate theme of accessibility and usability awareness of online faculty. These are a general accessibility awareness gap, and faculty awareness of SWDs, accessibility policies, guidelines and laws. All participants were referenced within this theme in all 14 interview transcripts (sources) and 142 individual codes (references) as depicted in Appendix K.

Six of the participants discussed a general awareness gap regarding faculty knowledge needed to support accessibility implementation and accommodations for SWDs. There were 7 sources and 24 references for this sub-ordinate theme. Heather made a statement that illuminates how faculty may be frustrated due to their limited

knowledge on this topic and how it restricts their ability to help SWDs in online courses: "That's great [laughter], you know. They want to help, but it's just like one more thing, and they don't have the knowledge. And it just becomes difficult. It's human nature." Faculty often lack knowledge of disabilities and how students access online materials. Because of this, they may not understand the needs of SWDs. The following statement from Catherine illustrates this: "My guess is that I haven't had students at least with a severe visual impairment, because I don't even know how they would do the online work with that type of impairment." Furthermore, participants reported that it takes time to implement attitudinal change. Sloan stated:

> "We've got a hell of a long way to go for people with disabilities. You know, I've been working in this profession for 30 some years, and I've seen progress, and I've seen change, and I've seen federal mandates in legislation about accessibility and inclusion, including the education. And it's fantastic. But the change in values, the change in stigma, the change in resources needed, that's a longer haul, you know."

Sloan stated that faculty should implement accessibility because it is necessary, so faculty should do it. However, it is important to report that she was the only participant who reported this perception:

> "It's something that needs to be done, and so you do it. I will tell you, I'd love to have somebody just at my beck and call that would help me build this. I'd love to just be able to give the content and say, "Hey, here, go do -- build this course for me, with all the bells and the whistles, and all the latest technology, because I like that innovation, and I like that use of technology for inclusion."

When considering whether OLEs should be made to be accessible even when SWDs are not enrolled in the course, the three participants from within fields with an emphasis on accessibility or working with PWDs were referenced (Joan, Heather, and Sloan). Sloan summarized the importance of considering the needs of SWDs:

> "Well, I think it's probably a two prong -- you know, students who don't have disabilities need to be educated, and made aware. I mean, we've got 54 million

> Americans who experience a disability, you know. So, it's everywhere. And if you yourself do not have a disability, someone you know probably does, or will experience a disability, or chronic illness."

Heather expressed concerns about how faculty may perceive accessibility or the need to work with SWDs in a negative light:

> "I think just the idea that it does take more time, and time is something that nobody seems to have a lot of. So, I think that's why a lot of people see it as a negative thing. I don't see it as a negative thing, because this is my field. And my whole idea is wanting people to be able to reach their potential, and that means being able to access the same resources. But, that's my passion. But I worry about other classes, other departments where that's not their main purpose. And so, I'm afraid they see it as a very negative, difficult thing to do."

Although faculty want to help and do the right thing regarding providing accommodations, participants were aware of their limitations due to awareness gaps. Noval stated:

> "I hope faculty can get some more awareness about, so they can really help their students kind of get through. And I hate to see a lot of students fail because of it. They're hiding something or are not able to get the help that they need, and so they don't pass."

All of the participants were referenced within the sub-ordinate theme of awareness of SWDs, as well as accessibility policies, guidelines and laws. They discussed their awareness or lack thereof for accessibility policies, knowledge about PWDs and accessibility laws. There were 14 sources and 118 references for this sub-ordinate theme. Bob shared how his university has a policy to ensure accessibility during the planning stages of the online courses and each course is reviewed prior to going live to ensure that they meet accessibility standards:

> "The courses are designed to have a great variety of needs accommodated both, you know, disabilities and otherwise. So, hopefully, you know, we've been thoughtful enough that experience isn't any different for somebody with disabilities."

An additional comment from Sloan supplements this statement and addresses the challenge of accessibility testing: “But that's always going to be the challenge, is to test the accessibility out.” As pointed out by Heather, there is often little to no regulation to ensure that online courses abide by existing accessibility policies:

> “It's very clearly stated on our website, but I don't know if there's anybody is policing it until there's an issue. And I think that's in general how things work, right? There's a guideline up there. If you're teaching an online course, you need to meet these requirements. It's all there. There's support to teach you how to do it. But until there's a student saying, ‘I can't access this course,’ I don't think that there's a policing, you know, looking at all of these courses.”

Faculty often learn about accessibility policies and procedures through emails or other electronic correspondence, as described by Noval:

> “They'll send something out that will tell you if you encounter a student with a disability, you are to connect them with an advisor, but it also is -- it has to be discreet, of course. So, what happens if a student announces it publicly in a forum where there's other students talking? I believe the policy states I can go and contact -- let that student know if they choose to or -- they disclose to me, that's what it is. If they disclose to me, then I can then tell them that they can contact the Office of Students -- of the Disabilities Office, and then I can actually give them the email address for their specific advisor, because I believe it is broken down by last name. So, if their last name falls between A through I, they see advisor so-and-so, and I can give them that contact information. And every now and then that policy will resurface through an email, remember, or faculty remember this. I haven't seen it lately, but we have the policy and an email that comes to us every now and again.”

Notifications are sometimes sent by upper administration to inform faculty about the importance of accessibility as mentioned by Heather: “The President's Office is sending out an email saying, ‘Look, this is happening. You need to make sure your classes are accessible.’”

Five participants stated that they were unaware of specific accessibility policies regarding online courses and sometimes had their own interpretations of what the policies entailed. When asked about her familiarity with accessibility policies in general or online,

Catherine stated that she was not aware of any such policies at her university. Although Sloan stated that she was not familiar with any specific accessibility policies at her university, she expressed that she felt very strongly that faculty should do the right thing when it comes to making accommodations and providing accessible materials: “I don't necessarily know all the policies, until I have a reason to go look them up. And I'm also a person that believes in just doing the right thing, you know, I don't care what policy is.”

Three participants, Sloan, Catherine, and Joan looked up information during our interviews, sent follow-up information via email after they looked up information, or noted that they were able to easily look up policies and procedures on accessibility or working with PWDs. Catherine actually looked up policies for SWDs on her school website during our interview: “There's a link here that says help and resources. Let me see what it includes. It includes information about the bookstore. Actually, there is something here. It says disability services.”

Awareness of principles of universal design was only mentioned by Joan, Heather, and Sloan, the three faculty who have an emphasis on working with accessibility, AT or PWDs. Sloan seemed to be very proud of the supports and services offered at her university: “We have many resources and supports available to us as faculty members if we need assistance in regards to accessibility, including universal design, you know, and how best to go about universal design.” Regarding faculty awareness of disabilities, Joan stated that there is a higher level of awareness for higher incidence disabilities, such as specific learning disabilities (SLDs), compared to lower incidence disabilities:

> “Yeah, because blindness tends to be a fairly low incidence disability, except for, you know, people over 65 or in visual impairments in general. I just think that

> people don't automatically think about accessibility for low incidence disability. So, I think, there's more awareness perhaps of higher incidence disabilities, like learning disabilities than something like blindness."

Gieuseppi, Noval, and Sloan expressed concerns about the stigma of labels. Gieuseppi indicated that he prefers to consider students on an individual basis rather than labeling: "I don't think about labeling. I just look at each student, you know, and I think the student needs more of this and less of that. And that's kind of what I go by." Other participants were uneasy about students being misdiagnosed with incorrect labels and were concerned that students had access to needed services or treatments. Noval expressed this:

> "We live in a time where labels are being handed out left and right, so a lot of students are saying "I have this, I have this, I have this," and I don't necessarily know if they do. And if they do have it, I'm hoping that they're getting it taken care of."

Sloan discussed how SWDs are often hesitant to disclose their disabilities due to a concern about how others will perceive them. She stated that there is a need to work with students to help them to be more comfortable disclosing disabilities in OLEs. She considers it her responsibility to work with SWDs to help them feel less stigmatized and to encourage them to seek services through the university:

> "I think one of my jobs is to make sure that I communicate with all students, you know, that this isn't stigmatizing. If you need the accommodations and the supports, and they're available through the university, and you're entitled to them, you know, take them."

Six of the seven participants mentioned laws pertaining to accessibility, accommodations, or PWDs during their interviews. Some participants simply named the laws, such as the Americans with Disabilities Act (ADA) or Section 508 of the Rehabilitation Act without going into further detail about knowledge about these laws as

they pertain to online education. This is demonstrated in this statement from Catherine: "I'm sure there was probably something in there about, you know, ADA, but you know, it's nothing that stuck with me."

Other faculty had more in-depth knowledge and actually worked with other staff to ensure that their courses were compliant. Heather, Sloan, and Noval mentioned an awareness of the Rehabilitation Act. Bob, Catherine, Joan, Noval and Sloan mentioned the ADA. Bob discussed how many of the courses in his department have been revised for ADA compliance: "…we've adapted a lot of our courses, and I think most of them are ADA compliant at this point." A driving force for Heather's university was recent course cases dealing with accessibility issues within higher education:

> "Before, I think it was sort of a -- if you happened to catch a class or meet somebody that's talking about accessibility, you'll find out about it. But now that it's come -- these court cases have happened, and the President's Office is sending out an email saying, "Look, this is happening. You need to make sure your classes are accessible and that you work with the Disability Resource Center," it makes the deans more aware, and they push it out at their level. So, I think it's getting out there more."

During numerous informal conversations throughout this research at conferences, the topic of lawsuits pertaining to accessibility in higher education came up frequently. The fear of lawsuits definitely appears to be a driving force for many universities and colleges to improve accessibility and accommodation related services.

Interactions and Relationships Relating to SWDs and Accessibility

There are five sub-ordinate themes within the super-ordinate theme of interactions and relationships relating to SWDs and accessibility. The sub-ordinate themes include: Collaboration with other faculty regarding accessibility and SWDs; connections and peer support between SWDs and other students; faculty learning about students' disabilities;

faculty relationships with SWDs; and university services and departments that assist with accessibility and accommodations. All participants were referenced within this super-ordinate theme. There were 14 sources and 387 references as depicted in Appendix K. Sloan described how relationships and the nature of interactions permeate from administrator to faculty to student, and then from student to student:

> "I think it works both ways, you know. The strongest relationships are probably student to student, you know, and so it's got to work at that level. But I think if you don't have it coming from the top as well -- I think it's a stronger design or a stronger experience if it permeates the very culture of the school or the program."

Several university services and departments were discussed that assist with accessibility and accommodations, including: administration, ODS, accessibility office, AT service, instructional design and information technology. Participants talked about their experiences interacting with these departments for accessibility and accommodations for SWDs in online courses. Bob, Heather, and Sloan shared that their administration has been extremely supportive of the initiatives for accessibility and accommodations in online courses. Because of this support from upper administration, Bob explained that accessibility is considered during budgeting and funds are allotted as needed for this purpose:

> "Well, they are very concerned that our online degree is as good, if not better, than our face-to-face degrees, which then leads to them not doing things on the cheap. So, when we design a course, there's a lot of quality put into it. So, say for instance, that we needed to have some sort of accommodation built into a course, there'd be a budget for that rather than somebody trying to have to -- I guess hodgepodge it or, you know, do it on the fly. There would be the necessary resources put into that, so that it could get done properly."

Sloan expressed gratitude for the support from administration for needed accommodations and accessible design in her department's online courses. She stated: "We're very fortunate that we work for an institution that is very much aware of diversity,

and differences in the needs that people may have to be successful, you know, and supportive of that, and making those things happen."

Catherine talked about SWDs needing to physically come to campus to apply for services and that this may be a potential burden for students taking online courses:

> "I think they actually have to physically go to campus, and turn in a document that shows that they have a disability. And I wonder if some students just aren't willing to make that trip to campus, like if all their classes are online, maybe they're not even willing to make that one trip to the campus to actually go to the disability services office."

Joan was perplexed as to the reason why some SWDs do not follow through with the ODS department:

> "There are students who have told me, for example, that they have a learning disability, but they have not gone through students' -- the Student Disability Office for whatever reason, whether they didn't want to do the paperwork, documentation -- I don't know what kind of proof or paperwork or doctor's reports or whatever students have to have, to verify a disability as far as the university is concerned, and whether that is why they have not actually gone through the student disability services or why they -- in the cases where students just self-reported, I don't know why they didn't go through the Disability Office."

There were several different names provided by participants for their respective ODS departments at the different schools where they teach online. Sloan discussed that a title name change was implemented at her school to help make this department seem less stigmatizing and more welcoming for SWDs:

> "We have a very active Division for Academic Success, and you can tell just by their name title. You know, Division of Academic Success is empowering, you know, it's not stigmatizing compared to Disability Support Office, or whatever it is that other institutions name their support units."

Some participants provided examples of how the ODS department collaborates with faculty to assist SWDs. One of Joan's students, who was from another country, needed additional services due to his limited technology skills:

> "As it turns out, his use of technology was -- his skills were not very strong in technology, and so we ended up having to work with him pretty closely also to get his technology skills up, and so we worked with the Office of Disability and some -- and actually a local rehabilitation agency, and a lot of -- he needed a lot of support. He was very bright, but [laughter]."

When a student was recently diagnosed with a disability, Noval instructed the student to apply for services, and then followed through to ensure that she abided by the required accommodations list:

> "When she got the diagnosis, she took the initiative to contact her enrollment counselor, I believe that was at the time, or academic counselor at the time which -- with one of the schools I work with, we have no contact with them as faculty. So, the student would contact them, academic counselor, and they put her in contact with disabilities. Disabilities Office contacts me and they let me know specifically what I'm supposed to do and the time that I'm supposed to give them to complete all assignments. And I worked with the Disabilities Office at that point, and that's really the way it works."

Several participants referenced documentation that they are required to sign, stating that they will adhere to the recommended accommodations. Catherine reported: "They send me the contract, and I sign it and send it back, then I don't really interact with anyone."

Four participants, including, Gieuseppi, Heather, Joan, and Sloan articulated that they often felt that they could provide needed accommodations without the assistance of ODS or other departments. Although a student was registered for services through ODS, Gieuseppi reported that he did not need to collaborate with that department:

> "I didn't really need to go through him to work with the student ever. I don't know that she -- if she spoke with him, you know, and it didn't get to me, I'm not aware of that. But, I didn't need to communicate with him instead of her at any time."

Heather, Joan, and Sloan were proactive in providing accommodations regardless of whether or not SWDs were enrolled with ODS or had an approved list of accommodations, as illuminated in Sloan's statement: "I don't wait to make the changes, or the adjustments, or the accommodations until I receive that letter. You know, once I

have a heads up, I just start building the course with that in mind." Gieuseppi and Noval conveyed that they had a need and desire for more interaction with ODS online, as specified by Noval:

> "I don't really get to hear their voice, so to speak, in disability services. I would love to have a face with a name, so that I can say 'You need to talk to Mr. So-and-so or Dr. So-and-so about this.' And a little bit more personalized would be nice for the online setting. I think it would help us as faculty if we kind of work more closely when the students kind of give us hints and drop hints. I would love to be able to have a session, 'Well, what happens when a student said this?' And you know, they can say 'Well, you should be doing this versus trying to guess or figure out okay, they said they had this.' You know, that's crazy, and so I don't know..."

Other accessibility services that faculty or students interact with include the ADA office, AT services, and sometimes an AT lab. According to Bob, the ADA office collaborates with university departments and faculty to review all courses prior to their launch: "All courses are reviewed for accessibility prior to being launched. So, the course basically goes to the ADA office, reviewed to make sure that it's okay, and then it gets launched." Heather discussed her experiences working with the AT department for assistance with captioning services:

> "It was really hard to kind of get all of that in. But, luckily, our school has services to provide captioning for videos. So, if we could get the videos to that department, the Assistive Technology Department within like a week to a-week-and-a-half before we needed to post it, they would caption it. They actually have several graduate students in there, and they make sure that videos are captioned for professors. So, you think that would be great, [laughter] right?"

In contrast, Catherine and Noval made comments indicating that they had very little interaction with anyone regarding accessibility or accommodations in their online classes. While Noval shared that she had different experiences at different schools, she stated that she had almost no contact with anyone at one of the schools where she teaches online:

> "I have never gotten anything -- except for one person, and she was a disabled vet. But I never got any information from her officer, from her advisor regarding that at all, when she was registered through. I believe I helped her get registered through, and I never heard anything from that office at all, versus the other school, they'll contact you upfront and let you know."

Other services that participants collaborated with for accessibility and accommodations in their OLEs included the following departments: instructional design, information technology and virtual school offices. Both Bob and Sloan talked about collaborations with instructional designers, but Bob made the most references to this and recognized the importance of these professionals to ensure accessibility in OLEs:

> "We're in contact, you know, a few times a semester, and as needed, if there were a disability issue, you know, I would work very closely with the instructional designer to make sure that it was ADA compliant, and in particular, met that student's needs."

Joan, Noval, and Sloan had good experiences with the information technology department and had regular interactions with them regarding accessibility. Joan had frequent communications with the technology specialists about inaccessibility issues in her courses and laughed about their interactions. She stated that she understood that some of the decisions for inaccessible content was not the fault of the technology specialist:

> "I have a good relationship with the technology person, because I think she just thinks I'm very funny. I mean I sent her these crazy emails, and I think they amuse her, and so [laughter] -- so I think she just -- I don't know. I think she just thinks I'm kind of nuts and she'll -- and because I appreciate her too. I mean I do realize that she's working with dozens of people in the department, and that her job is hard enough, so she doesn't need any grief from me about a decision that was kind of out of her control."

Noval's experience was that the technology and instructional design departments were much more interactive and responsive online compared to in traditional courses:

> "I will say that IT specifically, we talk about them in the online setting. They're pretty on top of everything, because that's how they function, they have to be. In the traditional classroom setting, IT is not very nice. [Laughter] They don't like to

> be called for anything. They don't want to come down to fix anything. They were horrible, I'll just tell you that, because it was a different setup."

Catherine and Heather mentioned interactions with their virtual school, also called the distance education department. Catherine indicated, "If I have any issues, then I have the contact information for the person who runs the virtual school. So, if there was an issue, then that's who I would contact." Heather, on the other hand, stated that the distance education department did not understand accessibility needs for SWDs. She stated that, "…all of the tools that the Distance Ed Department is kind of encouraging us [laughter] to use, not always accessible, and often not accessible."

Four participants talked about their experiences collaborating with other faculty regarding accessibility and SWDs. This ranged from little experience collaborating on this topic to other participants having a significant amount of experience in this area. Noval stated that she has only interacted with one other faculty member, as mentioned previously, who has a disability:

> "That's probably the only person I've ever spoken to who has talked a little bit about students with disabilities, and then they themselves, being the faculty member having a disability -- and actually he wanted to do some research. So, that was like the first time ever we connected with anybody."

Likewise, Catherine had no experience collaborating with other faculty on this topic. Conversely, all three participants who work in fields with an emphasis on accessibility, AT, or with PWDS, described having a great amount of collaboration with other faculty regarding accessibility and working with SWDs in online courses. Heather detailed regular interactions with other faculty:

> "In our faculty meetings, we meet every other week. There's been a component of, you know, what questions about accessibility, or what problems have we run into, where we'll talk about it for a period of time in those meetings. You know, half an hour of, 'I did this and it works,' or you know 'This document is not accessible.

> What do I need to do?' Or we might invite somebody in to help us like with the Camtasia video recording."

Student rapport was cited as being very important between faculty and SWDs online. Noval stated that, "…when you have the good rapport with the student that they're more likely to let you know what their needs are and so forth." Catherine offered suggestions that she felt would help build better rapport between SWDs and faculty:

> "I think if the online colleges require that -- you know, like if a student had a disability, and they gave you the letter at the beginning, that you had to, you know, touch base with that student once per week, to make sure that they were on track, then because you're interacting with that student on a weekly basis, then you're probably going to develop more of a relationship with that student."

A fundamental sub-ordinate theme that participants discussed was how they learned about SWDs in their online courses and how SWDs disclose about their disabilities. Some of the topics discussed were: Faculty noticing student difficulties and suspecting secondary disabilities; ODS informing faculty about having SWDs in their courses; students disclosing disabilities; and what faculty think would help students feel more comfortable about disclosing in OLEs. Two participants, Noval and Gieuseppi, shared that they sometimes suspected that students may have a disability, but do not have any confirming information to verify this. Noval talked about an experience working with a student who was having difficulty with an assignment. Not only did the student submit the assignment multiple times, but all instances were incorrect:

> "I knew something was wrong. She would post things four and five times to the assignment link, and all five submissions were completely wrong, like way off base, and then she'll finally say 'Okay, I get it now, I found it.'"

All participants talked about their experiences learning about SWDs from the ODS department. Some of the participants stated that they received an email from ODS stating that a SWD was enrolled in their class, and accommodations were listed in this

email. Catherine, like most other participants, reported that she had very little interaction with ODS once she received this email: “But other than that email that says, ‘So and so is going to be in your class, and these are the accommodations they need,’ and I've never had any other interaction with the office.” Some of the participants, including Heather, indicated that after ODS and a SWD agree upon the list of accommodations, that it was the responsibility of the student to provide this list to their teachers:

> “They have to basically get a document that says, "You know, I'm registered through the Disability Resource Center," in that document it tells you as the professor, like what accommodations are appropriate. And so, the student is supposed to give us that document.”

When some of the participants received this letter, they followed up with the student to discuss their needs, as Sloan stated:

> “We do require that folks go to, you know, seek the formal process. And then, once I get a letter that accommodations are required, I usually like to communicate with individuals to find out what works well for them, to see how best we can make sure that it's a successful learning experience for them.”

Due to the Family Educational Rights and Privacy Act (FERPA) (http://www2.ed.gov/policy/gen/guid/fpco/ferpa/index.html), faculty are often not informed about the nature of a student’s disability. Catherine, Gieuseppi, and Noval expressed that this was a source of frustration for them. Gieuseppi stated, “There really is no notice given to me if a student is diagnosed as special ed. or with a SLD or anything like that.” Noval received a list of accommodations for a SWD that was enrolled in her class, but she was given very few details about the student:

> “They will not disclose specifically what the disability is, I remember that. They didn't put down what her problem was, but that I needed to make sure that I held my end of the bargain in giving them more time and being compliant with the school.”

Another source of frustration for Bob and Noval was that it often takes a long time to initiate services through ODS. Noval voiced this:

> "Then you have to scramble to try to find a number to contact the person, to work with them, to get them -- and I don't know if that person is going to contact that student. That student may not get back to me. If they did get contacted, it seems like it goes away into like a black hole, where you know, every now and again I luck up."

When working with students to determine whether or not they qualify for services from ODS, Noval also discussed that she is not always aware of when to refer students for services: "Then that student doesn't get the service, because you didn't know that that qualified or that was something you could have done. It's kind of -- it's just so frustrating. I didn't know we were supposed to do that."

Most of the participants reported that they believed that many SWDs do not report their disabilities to faculty or ODS. As Bob stated, "I would say there is probably a very strong possibility that there are some that I'm completely unaware of." According to Sloan, there is likely a much larger percentage of SWDs in online programs compared to those who report their disability to ODS: "I don't think we really have a clear handle on the number of students who have a disability. Because if they don't identify or disclose, you know, we're not going to know necessarily."

Participants expressed their opinions for when students are more or less likely to disclose. Heather, Noval and Sloan indicated that they felt that students were more likely to disclose in traditional settings, as in this narrative from Heather:

> "I think it is a difference between how the students themselves deal with it. So, if you are walking into a class, and meeting the professor, and going to see them every week, I think those students are more likely going to do what they need to do and go to the Disability Resource Center, and get the documentation that they need."

Heather and Sloan compared differences between students with invisible versus visible disabilities, and as Sloan stated, students with invisible or hidden disabilities often may choose not to disclose:

> "Students who have learning disabilities, it seems generally speaking maybe less likely to disclose. That's one of those invisible disabilities. Especially, when you're an undergrad, you want to fit in, you know. You want to be a college student, and really benefit from that experience. And so, to identify yourself as having a learning disability or a challenge, may not be something that some students will want to do. But you know, you'll have other students that will just say, 'Hey, I've got a learning disability, you know, I need some help on this,' and they're open about it."

Moreover, some students try to hide or deny that they have a disability, as Noval stated, "Some will deny it, they don't want it. So, it just is kind of weird to kind of work with the students like that, just because sometimes they don't want anyone to know."

Unanimously, all participants discussed examples where SWDs self-disclosed to the faculty that they had a disability. In Joan's experience, students typically disclosed early during the semester, often prior to the start of the course: "Generally speaking, the students have self-identified, and have let me know prior to the beginning of the class." Email was cited frequently as a means for faculty learning about students' disabilities and needed accommodations. Sometimes, as Catherine stated, students self-disclosed this information directly to the participants: "They send email at the beginning that says, 'Hey, I have, you know, that kind of disability, I need extra time for this, this and that.'" Although Bob does receive information from the university, students have the responsibility of disclosing information about their disability and needs directly to faculty. He stated that "…the university will send it, but most of the time the responsibility falls on the student themselves."

Unfortunately, in several instances given by Bob, Heather, Noval, and Sloan, SWDs often disclose after they are failing or towards the end of a class. This does not allow faculty or the university time to provide needed accommodations or initiate services. Bob described his response to a student who disclosed near the end of a class:

> "Well, unfortunately usually at that point, I just have to recommend the late drop in -- you know, it's normally they're doing things outside of the system, like they haven't contacted the Office of Disability Services, and obviously if they're contacting the Office of Disability Services in week 12, or whatever it is, and it takes a week to process. Well, their semester is basically done, and there's no -- nothing that can be done at that point."

In contrast, when students report early, faculty were able to assist as needed, and were more willing to give extensions to students who mentioned an issue early in the class. Noval discussed this in the following narrative:

> "One thing that I will do if a student tells me that they have something, is I'll look for them to ask for an extension at the end of the course and sometimes they usually do. So, I'll kind of keep a note on why the student may not have finished the class or I'm just going to kind of -- if there's five students in a class that may have said somewhere along the line that they've had something, I kind of keep an eye on them towards the end of the course. If they say, 'I needed disability,' I can say okay, that's so-and-so. So-and-so said she had whatever during week two or something along those lines, so she's been asking me 50 different questions about such and such, I'm more than likely to go ahead to give that student an extension, versus a student who may not say anything to me at all through the class and then ask for an extension, I'm usually aware of whatever specific set they may say."

Several participants discussed what they think would help students feel more comfortable disclosing disabilities in online courses. Catherine suggested including details about available services in the initial welcome email to students:

> "I send a welcome email that says hey, this is who I am. This is how you can reach me. But perhaps in that email, I just say, you know, these are the resources that are available on campus. And I can mention, you know, the Disability Resource Center, the Learning Resource Center just so if they didn't know about those things, then they'll at least be aware of them."

Additionally, Sloan talked about the importance of modeling inclusive behavior to help encourage other students to be more welcoming and accepting:

> "I think the professor can model to a certain level. But that's something that I would think would have to happen student to student, you know, as relationship builds. But I think the department as a whole could create a culture of inclusion. And I think that they can do that through orientation. I think they can do that through posting values and philosophies.
>
> I think they could do that in terms of posting etiquette, you know, what are good social intelligent skills? What are good interpersonal skills? How do we communicate with one another? You know, that sort of thing. I think it's really important that management, and leadership infuses that culture. So, that trickles down to faculty, and would trickle down to students."

Sloan discussed how this behavior modeling can then help students interact with one another to share about their disabilities. The connections and peer support from student to student was noted to be valuable and important, as illuminated by Sloan:

> "I just really value and appreciate -- and I'm quite tickled to tell you the truth, the connection that our students who experience disability, and our students who do not experience disability, how those connections form. You can also see it in the classroom, but it seems to be to a lesser extent."

Faculty who have an emphasis on accessibility, AT, or working with PWDs

There are five sub-ordinate themes within the super-ordinate theme of faculty who have an emphasis on accessibility, AT or working with PWDs, which was created to discuss the different perspectives and experiences within this participant category compared to other participants who are from other content areas. The sub-ordinate themes include: Accessibility is improving online; concern for accessibility in other content areas; connection to ODS and other similar services may be stronger with these programs leading to a higher level of accessibility. The three participants in the category of faculty who have an emphasis on accessibility, AT, or working with PWDs are all

referenced within this super-ordinate theme, including Joan, Heather, and Sloan. There were 6 sources and 157 references as depicted in Appendix K.

All of the participants in this category made comments expressing that they believed that accessibility was improving online. Sloan stated, “I do think things are getting a little bit better.” These participants also expressed their belief that accessibility awareness is starting to improve. As Heather commented:

> “I would imagine that if these things are coming up and schools are having to deal with it, that the people that make decisions about budgets are giving more money to support accessibility for the faculty. But I think at the actual school level, or department level, it probably hasn't changed a lot except for the fact that, that word is getting out more.”

These participants also were concerned for accessibility within other content areas. In particular, Joan was concerned about LMS software accessibility:

> “I'm also thinking from a policy standpoint. Yes, I know that blindness and visual impairments is a low instance disability, but if we're truly thinking about universities as places that are as supportive and welcoming to the diversity of students as possible, I would certainly hope that they wouldn't adopt a course management system that has some major flaws with accessibility.”

Heather and Sloan remarked that faculty are content experts, not accessibility experts. They also expressed that even faculty who work in the field with PWDs may not be accessibility experts. Heather stated that there is a need for more supports for faculty because they are not experts in creating accessible documents:

> “I think that that would be great if we could maybe provide more support in the building of courses, and have people know the accessibility from that end, rather than expecting the professor who is teaching the course to be able to also be that expert creator of these documents, because although it's not necessarily complicated, it takes time to do all of these things.”

Faculty within the fields of accessibility or who work with SWDs were concerned about how faculty in other programs perceive accessibility. Heather voiced this concern and

stated, “I worry about other classes, other departments where that's not their main purpose. And so, I'm afraid they see it as a very negative, difficult thing to do.”

Both Sloan and Heather made numerous comments about their departments having a close connection and working relationship with the ODS office or other accessibility related services within their respective universities. Additionally, Sloan stated that some of the graduates from her department actually worked for the ODS office: “Their office has a good relationship with our school. There are networks, faculty and staff networks. So, we know the staff at the Division of Academic Success as I mentioned. You know, many of the graduates were from our program.” In contrast, some faculty within specialized programs that focus on accessibility or working with PWDs may not have a close connection to ODS. Joan stated that rather than working closely with ODS herself, she encourages the students to work with them.

A pattern that developed within this theme for Heather and Sloan, was that there appears to be an expectation that programs with an emphasis on accessibility or disabilities are expected to be more accessible. As Sloan put it, “We walk the walk and talk the talk.” Heather discussed that this has to do with credibility within their fields:

> “I mean what kind of credibility do we have if we can't make our own stuff accessible, [laughter] you know, so we're going to preach to you about it [laughter]. So, it's really unusual I think in that way. I'm sure it's much more difficult for departments that don't have the knowledge, the understanding.”

These participants discussed that they valued the opportunities to work with SWDs and to receive assistance to improve accessibility. As Heather stated, “It's great for me. I think everybody should have a student [laughter] who is visually impaired in their class, so that they can find out what works well and what doesn't, so that it's usable and not just accessible.” Having experiences with students and PWDs seemed to bring about

a higher level of awareness among participants for the accessibility needs of SWDs. Furthermore, these participants are often considered accessibility experts among their peers, so other departments often look to them for assistance learning about accessibility and universal design. Sloan provided an example and explained that her department collaborates with "…other departments. Several of them work with individuals with disabilities, or chronic illnesses. So, that's kind of like preaching to the choir. But even with them, we've been told that they learn from us."

These participants reported that SWDs were more likely to enroll in programs that had an emphasis on accessibility, AT, or working with PWDs. Sloan emphasized this: "We do have quite a few students who come through our program, who experience a disability, ranging from the full gamut of disabilities to include sensory impairments, mobility impairments, muscular, motor impairments, as well." Moreover, Sloan stated that SWDs were also reportedly more likely to share and disclose information about their disabilities with faculty members and students compared to other content areas.

All three participants who teach in fields with an emphasis on accessibility, AT, or PWDs commented about issues with many educational tools being inaccessible or difficult to use for SWDs. While learning about new tools from administrators, colleagues, or at conferences, Joan talked about her experiences and responses to others pertaining to how she must ensure that all of the tools that she uses are accessible:

> "I think I just kind of tucked it away and thought, 'Well, if I really think this would be a great tool, I would find out for myself whether or not it's accessible and whether I could use it.' And I think, you know, I would just -- I speak in -- generally when I'm in those kinds of situations and I just say something like, 'You know, well, I always have to make sure that my courses are accessible, because you know, I often have students with visual disabilities and other disabilities in my classes.'"

Rather than using inaccessible materials, these three participants expressed that they often chose not to use them or to use alternate materials instead. Heather stated that sometimes, "…we work around it, but it's just been an inaccessible piece. There's always a workaround, right?" Sometimes, the experience was that software was accessible but complicated, resulting in an undue burden for SWDs as Heather described: "There's usually some component [laughter] of these online programs that make it difficult if not inaccessible, just difficult, you know. It might be accessible, but the student needs to know how to make their technology work with it." Heather and Sloan made comments about their disappointments when engaging tools prove to be inaccessible or difficult to use for SWDs. Heather summarized this well:

> "It's kind of disheartening when you plan what you want to do, and then you can't do it because, you know, Padlet is not accessible, or some tool that you want to use isn't accessible. So, I'm always kind of checking to see if it's accessible, and then thinking about what I can do."

Faculty Experiences and Perspectives of Working with SWDs in OLEs

There are eleven sub-ordinate themes within the super-ordinate theme of faculty experiences and perspectives of working with SWDs in OLEs. The sub-ordinate themes include: Culture of inclusion; experiences with various types of disabilities reported by students in OLEs; faculty frustration; faculty have demanding responsibilities, so the idea of implementing accessibility can be overwhelming; faculty perspective of students' perspective of OLEs and accessibility; perspectives of the advantages, challenges and comparisons of online versus traditional courses for SWDs; general technology concerns; misconceptions about accessibility and SWDs; student orientation is a good time to inform students about disability services and to foster inclusion; what would help faculty be better prepared to work with SWDs; and where do faculty feel that they need to

improve. All participants were referenced within this super-ordinate theme. There were 14 sources and 868 references as depicted in Appendix K.

Five participants shared about the importance of having a culture of inclusion within their online courses and universities. They discussed how when they model behaviors for inclusivity, students will often follow their examples. This is something that would likely help SWDs to feel more comfortable disclosing their disabilities in OLEs. Noval explained how she encourages students to be more inclusive:

> "We don't single out. We are taught to teach students that way as well. So, tone is a big thing. They are very big on that at that particular school. You pay attention to a lot of that. I will correct any student that comes on very specific with anything that may be flaming or what have you. So, we practice as faculty, because that is how we demonstrate to the students how to write. So, I try not to -- everyone has to be included in class discussion. I don't single out a student. If I want to say 'Jane -- Hi, Jane, good response,' it's 'Jane and class, great response.' We have to make sure everyone is included there. That was the biggest thing that they taught us in there, and then for the students to be able to include everyone. No 'Hey, girls.' No 'Hey, guys.' We kind of… It may slip in there from time to time, but we practice that, that they don't do that and we make sure we demonstrate in our responses to students that we include everyone in class, everyone is included. And that if we talk privately, we have a specific area where we talk with students privately. So, inclusion was really big, and they taught there -- we teach the students that too. It's a big part of it, which I don't want to go on, on that topic, but I don't know how I feel about that. I think balance is important in everything."

Sloan explained that equality is critical and enhances the quality of education for all students:

> "I think that the students with disabilities really enrich our program. And anytime we can hit points of diversity, man, we want to do it. And that's not just disability, that's race, ethnicity, gender, religion, LGBTQ, you know, whatever it is. It really enriches our program quite a bit. But, you know, we really start -- everyone's I think treated equally."

Both Gieuseppi and Sloan stated that they truly enjoy student diversity. As Gieuseppi expressed: "Part of why I like online, every student is unique, and I can treat each of

them according to, you know, the information that I get on them, and the feeling that I get on them."

Catherine, Heather, Noval, and Sloan all agreed that student orientations would be a good place to inform students about disability services and some mentioned that this would also be a good place to nurture concepts of inclusion among students. Even though she was unsure whether or not ODS was discussed during orientations, Catherine stated,

> "The orientation just kind of deals with the online environment. But I think since it's mandatory, perhaps something could be included in that orientation that is about disability services. Because every student has to do it, the orientation. So, that will be a good place to include information about the disability services"

Heather recommended training for SWDs and all students during the orientation or via a web page link to help them learn how to navigate in the LMS:

> "I think it would be really neat if there was a way to offer at least students who are enrolling, you know, just a link that says -- and maybe it could even be for anybody. But it'd probably work best if it was designed for individuals using screen readers or screen enlargers that said, 'You know, this is available if you need to learn how to get through this Blackboard course.' You can come meet with, you know, maybe people that are specifically set up for that in the Disability Resource Center. So that they know that they have somebody they could go to, to learn how to do that. So that they're not struggling through it after the course begins."

Participants discussed experiences with students who had various types of disabilities in OLEs. Figure 4.2 illustrates these disabilities in a tree map that displays the nodes and sub-nodes for four categories of disability, which include: sensory impairments, SLDs, physical disabilities, as well as other disabilities and health issues. This illustration depicts the number of participants who mentioned each type of disability, the number of interview transcripts (sources) where the disability was discussed and the number of individual codes (references) for each of these disabilities.

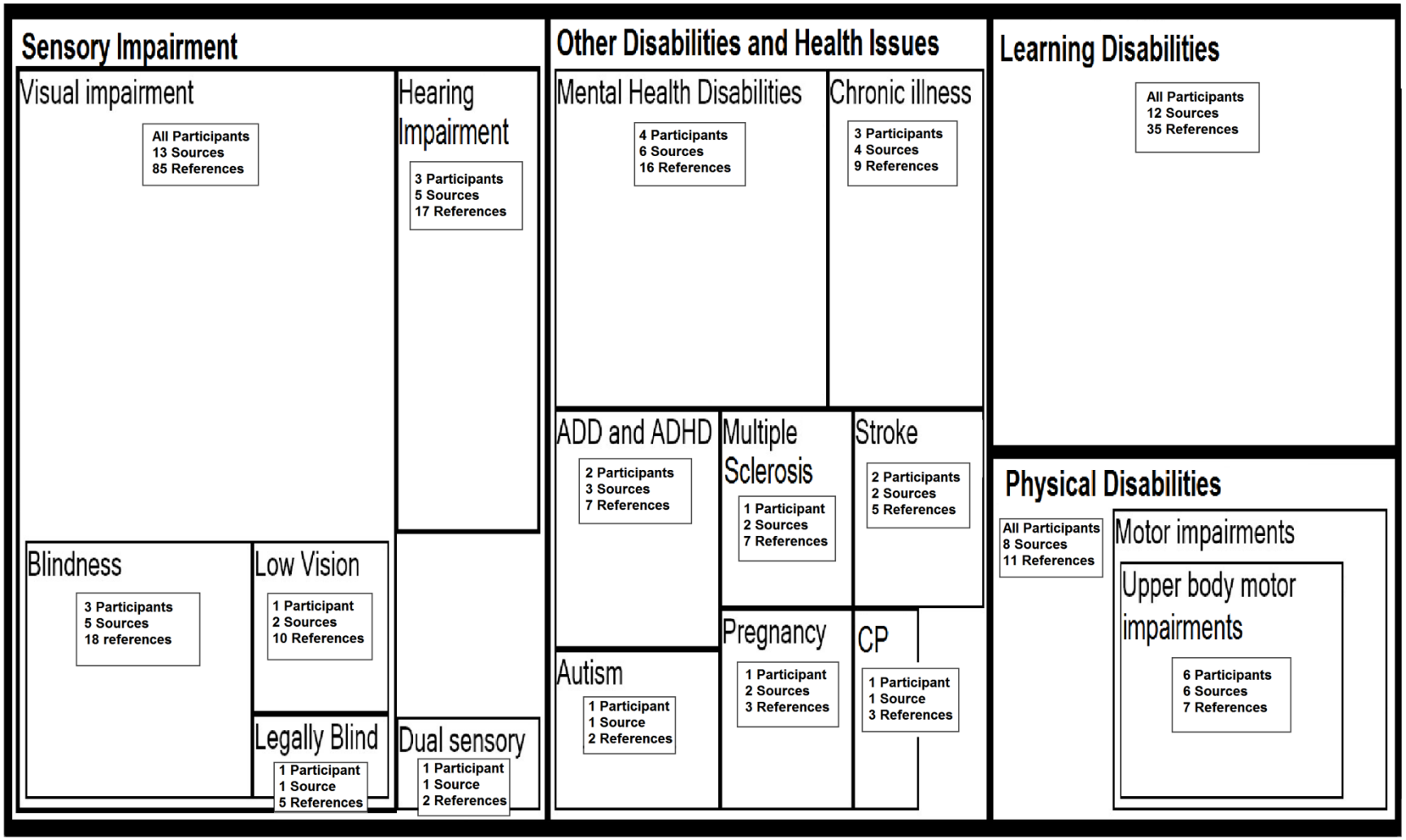

Figure 4.2. Tree Map of Nodes Compared by Number of Items Coded in NVivo for the Types of Disabilities that were Referenced.

The participants cited their experiences and opinions of working with students with these different types of disabilities and health issues in OLEs. Sensory impairments were discussed by all participants and referenced 107 times and included visual impairments, hearing impairments and dual sensory impairments. Though Catherine did not have experience with students with visual impairments online, she expressed an opinion that these students would have more difficulties than students with hearing impairments in online courses:

> "With visual impairment, perhaps I could just, you know, learn a program or something, or the software to just read it and upload a file, so that they could listen to it. Because my guess is that in the online classes, the students with the visual impairments are going to struggle more than the students with a hearing impairment."

Sloan, on the other hand, had experience with 10 students with visual impairments according to the pre-screening survey (Appendix M) and reported that audio quality was important when considering the needs for these students. Furthermore, she also stated that she forwards information to these students outside of the LMS to make sure that they have access to course materials:

> "If an individual is visually impaired, you know, it may be making sure that the quality of the audio that's involved -- you know, I really try to use audio-video materials as well. So, just making sure that the quality of the audio is there for individuals, and that it's understandable. Sometimes I may send materials to them outside of what's embedded in Blackboard."

Three participants discussed students with hearing impairments in OLEs; however, only Joan and Sloan stated that they had experience with students with hearing impairments online in the pre-screening survey (Appendix M). Some participants did not reference working with students with hearing impairments specifically, but they did discuss experiences or an understanding of the need for captions and transcripts, which

would be beneficial for these students. Sloan shared that she has had issues obtaining third-party videos with quality captioning: “In terms of hearing impairment or auditory impairment, it's really been an interesting experience seeing the type of captioning that's available for public access, and that's been an issue.” Only Sloan indicated that she had experience with students who had dual sensory impairments, including hearing and visual impairments. Although she only referenced this briefly two times, these students would likely have unique barriers in OLEs or other educational settings.

Learning disabilities, as shown in Figure 4.2, were discussed by all participants in 12 sources and referenced 35 times. Heather shared that her experience has been that students with SLDs often have difficulty keeping up with coursework:

> “For students with learning disabilities or attention deficit, for them to, you know, have to take that additional step of emailing, and having to write it down, and try to explain what their confusion is, it’s really hard to do. And so, it's just like one more thing, and then it actually puts them behind even more until they're just piled high with work [laughter] and then they call kind of in a panic.”

Joan stated that most faculty have a higher level of awareness of SLDs, compared to other disabilities, such as visual impairments:

> “I speak in -- generally when I'm in those kinds of situations and I just say something like, you know, well, I always have to make sure that my courses are accessible, because you know, I often have students with visual disabilities and other disabilities in my classes. And you know, that just kind of is a -- it's that awareness thing, that people say, ‘Oh okay.’ I mean, because I don't know how much people ever think about it, or if they think again, more in terms of students who have learning disabilities, and what they may have to do, you know, extra time or you know, some other kinds of support that might be needed.”

Physical disabilities, as illustrated in Figure 4.2, were discussed by all participants in 8 sources and referenced 11 times. These included motor impairments and head injuries. Upper body motor impairments, which are defined as one of the print related disabilities, were referenced by 6 participants in 6 sources and there were a total of 7

references. Noval described issues for a student that she worked with who had an upper body motor impairment: “One of her hands, the left or right, I don't remember, she was kind of not able to move as fast as the other students. I remember her telling me, ‘It takes me a while to kind of figure out how to download things.’ And that could have also been just computer literacy issues for her.” Catherine did not have experiences with students with upper body motor impairments, but she stated that she felt that these students would likely not have many issues in OLEs: “I would say it's possible with the upper body or with a hearing impairment. Because with those types of impairments, the way the online classroom is setup, they would still be able to do the work.”

Other disabilities and health issues were discussed by all participants in 10 sources and referenced 53 times. As depicted in figure 4.2, these included: mental health disabilities, attention deficit disorder (ADD), attention deficit with hyperactivity (ADHD) disorder, chronic illness, multiple sclerosis, stroke, autism, pregnancy, and cerebral palsy (CP). There was some crossover between some of these disabilities and other categories, as some may have fit into more than one category. For instance, some of these, such as multiple sclerosis and stroke may also be associated with other physical or visual impairments. Bob stated that the majority of student disabilities that he encountered were “…psychological in nature,” which is likely because his teaching focus is in the field of psychology. He stated that OLEs are very helpful for students who have social anxiety:

> “So, for instance, with like the social anxiety, you know, rather than coming into a classroom of 100 or more students, you know, they are physically a -- by themselves. But at the same time, it may actually be helping them overcome their social anxiety by interacting with a small group of students, and myself, you know, at their level of comfort.”

Noval stated that she had a different experience with male students who were in the military and suffering from depression or post-traumatic stress disorder (PTSD). She stated that these students often refused help: “The military males that are going through that or have been deployed often, depression is one of them, post-traumatic stress. They'll often be in counseling for that, not affiliated with the school, but they refuse to get any help.” Noval also discussed her experiences with a student who had a stroke who declined to contact ODS or seek out needed services: “She didn't want any help, and I believe I told her. She told me she had a stroke and I told her to contact the office. She didn't want to go through them.”

Participants discussed their perspectives of students’ perspectives of OLEs and accessibility. Bob, Joan, and Noval reported that they believed and hoped that SWDs had good experiences in their courses. Bob stated, “I would hope that they felt that they were, you know, welcomed in the course, and that they were able to navigate it successfully, you know, that it was well thought out, so that it reaches everybody's needs.” Most of the participants discussed or gave specific examples of SWDs having difficulty accessing course content. One student that Noval was working with, who had a stroke, was having such difficulty: “The student with the stroke, she had a couple of issues accessing some things online. She would tell me ‘I'm having a hard time downloading or I'm having a hard time finding things.’” Heather, Joan, and Noval shared examples of SWDs having difficulty keeping up with reading the required content, but as Heather described, they do not always disclose that they are having issues: “They're going to try to get through the course without having to say, ‘Look, I need help with this. It takes me longer to read.’”

When students are recently diagnosed with disabilities or health issues as adults, participants noted that this brought about different issues while these students adjusted to their disabilities. Joan provided an example of a student who recently had a stroke and was returning to school for the first time: “I had a student who had had a stroke the previous semester, and this was her first kind of foray back into class again, and so she had issues related also to reading for long periods and stamina.” One additional challenge for SWDs in OLEs, referenced by Gieuseppi and Noval, was that SWDs need to adjust to the differences of services between high school and college. Gieuseppi stated: “Any student needs to be prepared, that it's a different environment than high school or junior high school, obviously, you know, where they have IEPs and they are going to probably have a lot more handholding...”

Participants had varying awareness and knowledge about how SWDs use AT to access online courses. Some of the AT mentioned by participants when talking about their experiences with SWDs included braille technology (3 participants), screen magnification software (2 participants), screen reading software (4 participants), software to assist with reading and writing (1 participant), and voice recognition/speech recognition software (1 participant). According to Sloan, it was not necessary to know the details of how SWDs access materials, because they are able to use needed technology:

> “So that, you know, as a faculty, I really don't have to be concerned about necessarily how are they going to be able to do this. They figure it out, you know, and they problem-solve it, or they've already used this technology and the software, and they know how to do it. But they've been really good communicating with me, you know, "Hey, I'm using this, this, this and this," or, you know, and this is working well.”

Other participants, like Heather, had more of an in depth knowledge of a variety of AT used by SWDs. She was describing issues with remote software functioning properly

with SWDs who used screen readers (JAWS from her narrative) and screen magnification software (ZoomText from her narrative) to access an online technology lab:

> "…really the problem with JAWS and ZoomText is I think it really works a lot with the physical cards that are inside the computer; the video or the audio cards that are actually physically inside the computer. So, that capability can't transfer over an internet."

Participants discussed their perspectives of the characteristics of SWDs online. They compared similarities and differences between SWDs and students without disabilities; self-advocacy efforts for SWDs; and SWDs do not want faculty and other students to think badly of them. All but one participant discussed similarities of SWDs compared to other students without disabilities. Bob believed that the experiences for all students would be on more equal footing in OLEs, regardless of whether or not they had a disability:

> "I can't imagine it would be too much different than most other students' experiences. [Long Pause] I don't think I can elaborate much on that. I really don't think that it would be much different. Like I said last time, that you know, the courses are designed to have a great variety of needs accommodated both, you know, disabilities and otherwise. So, hopefully, you know, we've been thoughtful enough that experience isn't any different for somebody with disabilities."

Likewise, Catherine did not notice any differences between students with and without disabilities and commented, "I think I don't notice any discernible difference, you know, positive or negative in terms of either, you know, their grades are so much higher, or their grades are so much lower." Gieuseppi recalled his experiences with a student who had a visual impairment and used screen magnification software. He described their interactions as being similar to that with other students: "It was more like a, you know, regular student calling me, just wanted to clear something up, or let me know something, or you know, it was not related to his impairment at all, that I can recall."

Bob stated that many online students, regardless of whether or not they have a disability, are adults. Therefore, he discussed that many SWDs have similar responsibilities to other adult students: “I think it's a little similar to other students, is that students with disabilities have responsibilities too, similar to our other adult students. So, the online environment is kind of conducive to that as well.”

Catherine, Gieuseppi, and Sloan shared some differences in experiences between working with SWDs and other students without disabilities. Although Gieuseppi’s experience with one student was similar to other students without disabilities, he stated that he had a very different experience with another student who was visually impaired. Because she was having difficulty accessing course materials, he had more interactions with her and sent numerous emails directly to her:

> “Most of my conversation with students were as part of the class responding like when they would submit an assignment, you know, my little blurb at the end of the assignment, and stuff like that. Those were difficult for her to navigate. And so, anything, you know, responding about an assignment or, you know, if a student asked a question that I thought might relate to her, you know, as far as understanding things, and I always -- you know, a student said this, thought you might want to know, and stuff like that. So, I sent her -- you know, whereas normally, I would hardly ever just send a student an email. I was sending her emails, you know, two or three a week.”

A concern that was raised by Sloan was that PWDs “…often times just don't utilize the supports and services available to them.” Sloan explained that one difference between SWDs and students without disabilities is that if they do not request accommodations, than faculty are unable to offer assistance. Catherine shared her opinion for why SWDs may not always request services or accommodations in OLEs: “I sometimes also wonder if students think because it's online, that they can try to work at their own pace. Maybe

they don't think they need special accommodation with disability, because they're doing it at home."

Noval and Sloan discussed instances where SWDs were self-advocates and sought out needed services. This trait would be very helpful for SWDs while they are seeking services, as in Noval's example:

> "So, the school where the student had the MS, she took the liberty on her own at that point. She was just a little bit more assertive. Once she gets in contact with that officer, that officer would then contact me and let me know that this student has contacted our office."

In several examples by participants, positive experiences for SWDs were described. One that stands out is from Sloan, who discussed how SWDs become educators to faculty and other students in a course:

> "We had a contingency or a cohort of students who were hearing impaired. And I'll tell you what, they were very active in the discussions around technology and accessibility in terms of activities of daily living, and all that good sort of things. And making sure, you know, that fellow students were aware, this is the latest, this is the latest. And telling faculty, you know, 'Were you aware that this is the latest technology available out there?'"

Heather, Noval, and Sloan shared that SWDs do not want faculty or other students to think badly of them because of their disability. This was referenced by these participants as one of the reasons why SWDs do not disclose. Heather expanded on this:

> "I think until you can make them understand that it's not unusual, you know, that the teacher actually understands that it's not an intellectual thing. I think until you can convince somebody, or make them understand that and believe that, they're not going to identify. They're going to try to get through the course without having to say, 'Look, I need help with this. It takes me longer to read.' They don't want to identify, and feel like the professor is going to think they're not as smart as everybody else."

Several participants mentioned variations for SWDs regarding their knowledge and capabilities using technology. Noval commented that in her experience,

> "…their computer literacy is not very good, so that's the other aspect of disability. They don't know. They're slower at finding things, and focusing and reading. So, sometimes you might hear them say 'I can't read this because of the disability. It's hard for me to read things on the computer.'"

Sloan had a differing opinion and indicated that her department did not have any issues with accessibility due to advancements in technology, in addition to SWDs being savvier with how to use needed AT. She commented:

> "…quite honestly, I don't think we've had any problems with accessibility. I haven't had any problems with accessibility with my courses for some time now. And I think that's because of the widespread availability of computers, software, smartphones, and our students are very well educated, they know what they need, and they get it."

The participants discussed their perspectives of the advantages, challenges, and comparisons of online versus in face-to-face environments in 13 sources and 184 references (Appendix K). The 4 primary nodes within this sub-ordinate theme were: Accessibility challenges faced in online learning compared to traditional programs; advantages of online learning for SWDs and faculty accessibility support; converting face-to-face courses to online courses; and growth in online courses and programs, as well as increased enrollment of SWDs. One general statement that exemplifies why many SWDs choose to take online courses, was stated by Bob:

> "The online environment was more suitable to their learning needs. A lot of the ones that I'd see, have like a -- that are learning disabilities were particular -- something like social anxiety, where large crowds, like a 300 person classroom is going to completely impair their learning."

There were several accessibility challenges faced by faculty in OLEs compared to traditional face-to-face environments. Several participants, including Catherine, Heather, Gieuseppi, and Noval discussed that they do not feel as connected to students online as

they do in traditional settings. Catherine gave an example of feeling more connected with SWDs in traditional courses:

> "I think that with face-to-face, I feel more responsible for trying to make certain accommodations for the students, just in terms of my teaching style. Because you know, the student is like a real person. I've seen a lot of times with online classes, there's just kind of a name, because you never see them and you don't know them personally."

Noval, similar to other participants, expressed that it is difficult for her to know what services students are receiving in OLEs compared to traditional courses:

> "You kind of see and have a visual of what's going on, and how this student is being supported. In the online setting, you really don't know how the student is being supported. And if it is, that they are being supported, because it's online, the modality, is that the word, it's different."

Bob, Heather, and Sloan shared that the process of creating accessible content online takes advanced planning. As Bob explained:

> "That's mostly because of the time requirement sometimes it takes, to say create a transcript for a video, and you know, people think creatively about it and plan ahead, actually there's more technologies available for online than there is probably face-to-face, that actually in the long run makes the solution easier, but it's mostly the planning ahead part that I think is the challenge."

Catherine and Heather discussed how faculty and students need to adjust to the different learning pedagogy of OLEs compared to traditional settings and Heather stated that many SWDs are not prepared for these differences: "I think they all have a misinterpretation that it's going to be like taking a face-to-face class, but they can do it from home [laughter]. It's a very different experience, and lots of students are not ready for it."

Catherine, Heather, and Sloan discussed their experiences while transitioning from teaching in traditional courses to OLEs, as well as converting traditional courses to online courses. Heather shared her concerns about faculty needing to understand the differences between these two teaching formats:

> "I think for me, and for many of us, that was the hardest shift just because we are used to teaching face-to-face. And many of us, we're teachers in, you know, K-12 and our whole experience is teaching face-to-face. And then, you kind of throw that online, and expect professors to kind of know how to do it regardless of whether there's an accessibility issue or not, it's a big shift pedagogically that I don't think people really think about."

Catherine, Joan, and Noval made statements indicating that students are not always aware of accessibility services in OLEs. Both Catherine and Noval assumed that services were more known in traditional settings. According to Noval, she was always aware of who to contact in traditional settings to request assistance for SWDs. In contrast, in OLEs, she had to search to find information for who to contact within ODS:

> "You have to kind of figure out where to go, who to call, you have to dig the number up. It's not readily available, versus before if a student said anything, we got the number on speed dial in the traditional setting."

Six participants discussed some of the advantages of online learning for SWDs and faculty accessibility support. The first of the advantages discussed was anytime anywhere learning, which was discussed by Catherine, Heather, Joan, and Sloan. Many students who choose to take online courses were in different cities or states than the university. Participants also stated that the students had more time to preview readings and work on assignments at their own pace because course materials are often posted at the beginning of the class. Heather's narrative exemplifies this:

> "He also had more time -- because he's actually talked to me a little bit about it, but he had more time to work with it. So, it wasn't like within that class, and then you go home and try to deal with it. Like, you have that whole week, or even after that to access the stuff, to read it, to re-read, whatever. A lot of students have talked about that, about having it more than just in that class, at that moment, for that two hours, online you kind of have the information there, and we actually keep it up for quite a while."

Bob, Catherine, Joan, Noval, and Sloan mentioned accommodations needed in traditional settings which would not be needed in OLEs, such as interpreters, lighting

accommodations, note-takers, readers and separate rooms for testing purposes. Sloan reflected on some of the accommodations provided in traditional courses that may not be needed in OLEs. She stated that in traditional courses, different accommodations include, "…the need for interpreters probably, for instance on campus students maybe in need of an interpreter during the class, or note-takers." Bob, Heather, and Sloan, stated that online courses are more amenable for SWDs, as indicated by Heather's narrative:

> "I actually remember the one gentleman who, you know, I didn't hear [laughter] from very often. And occasionally, he would call me with an issue or two. I think that he just really enjoyed having access to everything in a way that -- the fact that we're putting it online, we're having to turn it into some digital form. So, I feel like -- for him, he felt like he had more access sometimes than he would in a face-to-face class. Because face-to-face class, a lot of times the professor is coming with handouts, and visual stuff that is not electronic in any way, so you have to ask for it to be in electronic form."

Students, including SWDs were reported to be more open in online courses, according to Noval and Sloan. Noval commented that,

> "…five years ago, I wouldn't have gotten much out of students. Now, students are very open, a little bit more open than they ever have been, which is good. I have to be careful, though, how it's perceived by some students and that's hard to monitor. And that's one of the things that I feel the more that we are able to share a little bit about, it gets a little bit easier for people to connect to each other, and that they're free to do that."

Five participants witnessed a growth in SWDs within OLEs, as detailed in Noval's narrative:

> "Within the last five or six years that I've been teaching online, I see more and more students with disabilities, more and more just kind of nonchalantly saying, 'I have something.' And I don't know if that's the times you're living in, or if it is something that is -- I don't know, so I see it a lot more than I ever have. And some of that, I don't know how true it is or not true it is, if it's something that a student is just dealing with and barely hanging on versus a student who is managing it, but I've seen so much of it."

Most of the participants expressed frustration with the process of accessibility implementation and students receiving needed services. One of the struggles and barriers that Heather shared was whether to caption every single video:

> "One of the things that we've struggled with as a faculty, is using those resources for every single video, because a lot of times the video is going to be out-of-date by the time you teach the course again. So, we generally teach like once a year, we'll teach the same course again, and we may post a video. And by the next year, when the next year comes around, that technology is outdated or, you know, we're focusing on something different.
>
> So, then you've used those resources to like to create either audio or captioning, and then you don't use it again. And you might not have had a student in your class who actually needed it at that time. So, we are still I think as a department, and as a university kind of trying to figure that piece out. Like, are we going to caption or audio-caption everything just in case there's somebody in the class when we don't know that we're going to use that same video again?"

Another frustration voiced by Gieuseppi was about trying to reach out to offer help to SWDs, but not receiving responses:

> "That is frustrating to me, that sometimes I think students probably need more help. But, you know, I just have my instincts to go on for that. And I've kind of extended to a couple of students trying to give them extra help when they didn't want it, you know. And I still don't know if they needed it but didn't want it, and were upset because I recognized it, or if I read them wrong, or they just happened to be having a bad day, you know, I don't know. [Laughter] so, that part was frustrating."

Likewise, Noval shared that the experience of working with SWDs online had been very frustrating compared to traditional settings:

> "The difference is, and I will say, is that when you're dealing with students with disabilities, because you are in an online environment, it's a difficult thing when it does occur, I will tell you that. In all the situations that have happened, I had one happen recently, it is frustrating beyond belief. Maybe that's just me. I find it very difficult to deal with it in this setting that we're in, versus in the traditional setting."

Faculty have demanding responsibilities and the idea of implementing accessibility was described to be overwhelming for at least 5 of the 7 participants. Sloan,

similar to Noval and Gieuseppi, commented that she and many faculty have full course loads and large classes. Therefore, she stated that accessibility is one additional responsibility for faculty to add to their already demanding course loads:

> "If you've got other institutions too -- I'm aware of other master's programs where, you know, faculty are responsible for teaching six courses a year, just Fall and Spring semesters. Well, you know, three to four courses a semester is a full-time job. So, even if the emphasis is not that much on scholarship but it's more on teaching, you still have a full load there. And trying to make your coursework accessible is just one more thing to add on."

Additionally, Heather and Sloan discussed that many faculty have other full-time jobs, in addition to teaching. As Heather stated, "We're not just teaching, and doing research on AT, we all have jobs in addition to that, that have varying like responsibilities, different grants, and things. So, teaching for many of us was not our main position [laughter]."

Heather and Sloan highlighted some of their general technology concerns and perspectives for online faculty. Sloan discussed the importance of keeping up with technology and concerns about generational gaps:

> "When I hear the faculty, and especially younger faculty -- we just hired a new faculty member who is really interested in technology. And so, I'm hoping that I'm going to be able to learn from her a little bit, you know. Because we have the Voice Podcasters, we have Voice E-mail, we have Voice Board, we've got that as I said the Wimba Classroom. There are all kinds of things out there. And I'm not sure if it's a generational thing, you know, I've been working for a little over 30 years."

She was very enthusiastic about wanting to learn more about technology:

> "If I had the time, and if I could go back in time, I want to use podcasts. I really want to use it. I love technology. You know, my colleagues always make fun of me, because I usually am the first one to have the new little gadget. And it's unbelievable to me, the apps, and what you can do now. But again, I laugh at myself, because you know, I'm very much -- I think what -- the average person uses 10% of their brain. And I'm sure I'm only using 10% of my iPad's, and my smartphone, and my Apple computer."

Both Heather and Sloan discussed rapid advancements in technology and their efforts to keep up. When Heather prepares for each iteration of courses, there are changes within each course: “What you demonstrate for this class might not be the same next semester, because things change so fast.”

Several misconceptions were interpreted by this researcher from faculty regarding their understanding and awareness of SWDs. Catherine indicated that she did not expect SWDs to produce quality work and stated that she did not suspect that a student had a disability because he produced excellent work: “You know, my guess is that it wasn't necessarily any kind of learning disability, because his work was excellent.” Bob made a comment that indicated that SWDs did not need accommodations and stated, “…my courses are actually set up for the most part, where the students actually don't need accommodations per se.” Furthermore, Noval stated that SWDs may be slower than other students in online courses: “We go through some professional development workshops, I can see how it can be a challenge, whether you have a disability or you don't, not being able -- I'm assuming with a disability, not being able to move as quickly.” Catherine was considering that SWDs may have had more time available to them because they were unable to maintain full-time employment:

> “I wonder. And again, this is obviously just me speculating, because I don't know the nature of their disability. But if it's a disability that prevents them from holding down, you know, a job, you know, a 9:00 to 5:00 job, then perhaps they just have more time than other students, you know, perhaps, speaking to other students, you know, you get those emails all the time from students, ‘I'm sorry, my kid is sick’ or ‘I had to work extra shift this week, because somebody got laid off or somebody got fired.’ So, I wonder if, you know, maybe some of the students with disabilities don't have full time employment, and perhaps they simply have more time to do the online work.”

Participants shared ideas for what would help them and other faculty be better prepared to work with SWDs online. Sloan's ideas for improving the awareness of faculty included several good suggestions:

> "There are many students who learn differently, who need tools to be able to learn, and sometimes those tools might be a little differently; and creativity, and non-judgment. You know, you'll have faculty say, 'Well, you know, you need to do this, this and this in this profession.' And I'm not sure how somebody would be able to do that. Well, you know, don't come from it with a deficit perspective. Do a little brainstorming and problem solving, and figure out how the hell are you going to make it happen? You know, so I think exposure, I think meeting people with disabilities, I think exploring their own values, would be helpful as well. But if faculty are not willing to do so on their own, I think it's helpful to have institutions tell us these are the procedures."

Supports are needed to assist faculty with creating online content. Heather explained that this would be helpful while faculty are learning how to create their own accessible materials:

> "So, while you're teaching them that kind of thing, there needs to be a place where you can send documents to have somebody make them accessible, and send them back to you so you can post them. And until that happens, I just don't see it changing. I think you have to teach how to make accessible PowerPoint. But, in the meantime, while people are learning those simple things they can do, they need a place that can help them do it for them, or do it for them in the meantime while they're learning those skills."

Faculty need to have experience with SWDs in order to be aware of whether or not something would be accessible for these students, as Joan stated:

> "I remember thinking to myself, I wonder if that would be accessible to blind students, and kind of just thinking, you know, I don't even know if I should ask because the answer is probably going to be, 'I have no idea, because I've never had a blind student.'"

Participants remarked on areas where they and other faculty need to improve regarding accessibility in OLEs. The time factor of planning ahead seemed to be important for several participants. Sloan stated,

> "It gets back to that feature of advanced planning and time. And, you know, if you're going to tell me, or ask me what the barrier is, that's it. You know, because I think most faculty withhold the values of inclusion, and wanting to provide an educational environment, in which all students would benefit, and thrive. But it's just that issue of just the time needed, and a reinforcement system."

Gieuseppi stated that he was not as aware of university resources as he could have been and remarked:

> "I think one thing that I feel like I should have done is, is paid more attention to the resources that the school offered me to help her. I don't know that I missed things. I mean, I don't know that she missed out because I didn't read them, but I think there are certainly things that I could have been more aware of to help her."

Faculty Training and Experience with Accessibility and PWDs

There are four sub-ordinate themes within the super-ordinate theme of faculty training and experience with accessibility and PWDs. The sub-ordinate themes include: Challenges towards providing accessibility training for faculty; faculty need versus desire for training in accessibility and online teaching in general; prior training and experience with accessibility or PWDs; as well as workshops and other training for faculty that includes information about accessibility or working with SWDs. All participants were referenced within this super-ordinate theme. There were 13 sources and 144 references as depicted in Appendix K.

Catherine, Heather, and Sloan talked about challenges towards providing accessibility training for themselves and other online faculty. Because accessibility training is optional, the challenge seems to be getting faculty to attend. As Heather stated:

> "I think the challenge is getting the faculty to go. [laughter] We can offer them, but we still need people to come to them. And I don't know what the numbers are, but you know, it might be something that I could get. But that's I think more of the challenge is, is not that you have the support, but that people are taking advantage of them."

Furthermore, little to no incentives are offered for faculty to attend accessibility trainings or implement accessibility in online courses. Sloan made a key statement that describes the essence of this issue as it relates to tenure: “Well, because I've got expectations to do this research, you know, to teach and do service. And so, I'm not going to not get tenure if I don't use the latest technology or make my classes accessible.”

Participants discussed faculty need versus desire for training in accessibility and online teaching in general. All of the participants shared that they had a desire for additional accessibility information and training, as commented by Noval:

> “I would just love to see a little bit more information about how it's done, and how these accommodations are made, and things like that, so that when students do ask, you know, I may point them to the disability services office, but I can also say, you know, you might consider this, or you know, I don't know, just anything that can kind of help them.”

According to Catherine, because faculty lack training and awareness of accessibility, SWDs are often affected in OLEs:

> “There really isn't any kind of separate training that we get, and the students are just mixed in our classes, then we really just kind of have to make the most of it, and I think that sometimes the students are the ones who suffer.”

Since some faculty do not know how to teach online in general, Heather explained that they cannot just be expected to know how to upload accessible content, and will likely require training in this area: “They just think, ‘Oh, put your content online, and make sure that it works for everybody who has a disability.’ But they don't really think about does the person know how to teach [laughter] online in general.”

The participants conversed about prior training and experience with accessibility or PWDs. Both Heather and Gieuseppi had past experiences teaching in K-12 schools and worked with SWDs in those environments. Three participants talked about learning about

PWDs and accessibility from reading literature on these topics. Five participants talked about their experiences working with SWDs in face-to-face courses in higher education Catherine and Joan shared about experiences working with family, friends and colleagues with disabilities. While participants may or may not have had other training in accessibility, these same participants acknowledged that they did not participate in any accessibility training at the university where they were currently teaching. Noval's statement makes this clear:

> "I wish we did have some more kind of training on those things. If I did have any, it was probably a long time ago, but I don't recall anything along those lines of getting training. It was more of, 'If you have any questions, ask.' I believe I actually had to sign something and send something back, if I remember correctly, saying that I would abide by it or something along those lines. But there was no training involved."

One final area that participants discussed regarding prior experiences was having previous positions or educational experiences in this field. Bob, Gieuseppi, Heather, Joan, and Sloan shared about their experiences working in previous employment positions or in Bob's example, working with his graduate school advisor, who taught him the importance of equality:

> "I think the biggest thing is that it's made me, I guess, more cognizant of it than maybe a lot of other people are, who don't have the same training with, say, employment law, you know. It's just something that my advisor in graduate school was very adamant about, was you know -- he was very much a humanist, and wanted to make sure everybody had equal opportunity. And so, it's something that was, kind of, driven home as a value for me personally.
>
> I mean it was one that I kind of had as growing up anyway. But having it kind of solidified in graduate school made it even more cognizant, particularly matching it to specific laws, and you know, when does it apply, helped me think about my courses in particular."

Several other participants noted that they were more cognizant of accessibility issues because of their past experiences within the field.

Some of the schools where participants were employed offered workshops and other training for faculty that included information about accessibility or working with SWDs. Bob, Heather, Noval and Sloan referenced available workshops at their institutions, as described by Heather:

> "The program has grown so much that now they have an accessibility specialist who understands all those guidelines, and has developed other workshops that are offered to students, and faculty. And they cover all different types of accessibilities, such as captioning videos, the HTML and accessibility, document accessibility where you can go and learn how to create an accessible Word document, an accessible PDF document; accessible PowerPoint is a big one. So, these kinds of workshops are offered throughout the year to whoever would like to take them."

To help bring an incentive to entice faculty to attend accessibility trainings, Sloan's university offered a financial reward for faculty who completed the course:

> "They would pay you as a faculty member a couple of thousand dollars, just to take the -- you know, just to take the class, yeah. But again, you know, it's time, and if I'm pre-tenure, I may not elect to follow up with that."

Faculty Autonomy within OLEs as it Relates to Creating Accessible Content

All participants discussed faculty autonomy within OLEs as it relates to creating accessible content. There are three sub-ordinate themes within the super-ordinate theme of faculty autonomy within OLEs as it relates to creating accessible content. The sub-ordinate themes include: Faculty can add or edit the LMS; faculty want to have creative freedom; and the LMS is prescripted, so faculty cannot edit or change it. There were 8 sources and 77 references as depicted in Appendix K.

Heather, Joan, Noval, and Sloan discussed their desire to have creative freedom within OLEs. When her course was changed to match standards required by her school, Joan's experience was that she felt that the standards were too picky and she preferred organizing her online classroom according to her own preferences:

> "I do think that it is a bit fussy, and that's why I kind of like the way I used to do it, but I don't -- as I said, it might just be me being a control freak and liking to do my own stuff my own way."

Online courses are often prescripted and faculty are unable to make changes themselves. Five participants made comments in alignment with this and Catherine described her experiences teaching online and working with prescripted materials:

> "Honestly, for the online teaching that I've done, it's usually not even my own documents. I've learned at most places, because they want the online experience to be standardized, that the online classroom is already developed by someone at the college, or university. And so, the documents, and everything are already there for every single class. And so, to my knowledge, they're not provided in any other format."

When courses are prescripted, faculty are sometimes able to make requests for changes to their courses as Gieuseppi discussed: "If I have suggestions for improvement, you know, there's a website to go to for that -- or not a website, but an email to go to for that." In contrast, faculty are sometimes able to modify courses and even have full autonomy, similar to Joan's experience: "I would say, a fair amount of autonomy as long as the course meets the standards and expectations that are required for that course, and usually that is given to me when I'm hired to teach a particular course." Most faculty seemed to value autonomy, as well as the ability to make changes to online courses. At the very least, faculty wanted to be able to make recommendations for changes.

Accommodations and Accessibility Features Used in OLEs

There are eight sub-ordinate themes within the super-ordinate theme of accommodations and accessibility features used in OLEs, including: Accommodations or features that help students with and without disabilities; audio and video accessibility; accommodations for faculty who have disabilities; how do faculty work with students to offer help, inform them about accessibility services and determine the most appropriate

accommodations; HTML elements that can be made to be accessible; more time as an accommodation; retrofitting accessibility; and that it is time intensive to implement accessibility. All participants discussed this super-ordinate theme during their interviews, while only some discussed the sub-ordinate themes. There were 14 sources and 384 references as depicted in Appendix K.

Six of the participants discussed how some accommodations or features can help both students with and without disabilities. There were 8 sources and 19 references for this sub-ordinate theme. Catherine expressed how spoken word videos had available transcripts, but that these were not only for students with hearing impairments:

> "I don't think that was specifically for people with a hearing disability. I think that was for anyone who I guess didn't have sound on their computer. You know, that might be one accommodation for people with a hearing impairment."

A couple of the participants also discussed how some technologies that were originally designed for PWDs, may also be helpful for faculty and students without disabilities. This brings more awareness about some of the assistive technologies available for PWDs. Sloan gave an example of how voice recognition is being used by a wide range of people:

> "But more and more college students are aware of apps on their phones, on their iPads, that may have originally been designed for accessibility reasons, but are now being used by them, you know [laughter]. Dragon Dictate, you know, I know students and myself included, that -- I use that on my phone now as a device to record my thoughts, and notes, you know. I can talk into my computer now, and have it come out in print.
>
> And so, you know, it's been kind of interesting watching how we've all just -- some of us have just begun using some of the available technology in our own lives when we don't really depend on it. But it makes it easier."

Gieuseppi, Sloan, and Noval talked about the importance of accommodating for unique learning styles and preferences, which would also be beneficial for all students. A statement from Noval highlights this: "I was telling her 'Call me, so we can talk about it,'

because I know some people, they learn better auditory -- auditory learners, and I figured talk with me, and we can work through it this way."

Five of the participants discussed audio and video accessibility. There were 7 sources and 56 references for this sub-ordinate theme. Captioning was the most frequently cited accommodation discussed for audio and video within OLEs, which was referenced by Bob, Heather, Joan, and Sloan. They discussed the importance and requirements to have captioning and audio descriptions, as well as resources to assist with these services, as discussed by Heather: "It's not an option. If you do have videos, they're supposed to be captioned. There are resources to make them captioned."

All five participants who were referenced for the sub-ordinate theme for audio and video accessibility, discussed the use of transcripts for audio and videos in online courses. Heather described how she uses pre-scripted notes to create transcripts for her lectures. When a SWD enrolls in a course, Bob explained that they made sure to include transcripts if they are not already available for a course:

> "If we do know that there is a student with a disability within the courses, we make sure that there is one in that course. So, for instance if somebody with disability, you know, enrolled in a course with audio that didn't have a transcript, a transcript would be created before the course went live, or by the time -- at the very least, by the time they were supposed to be getting to that assignment."

When seeking third-party videos, Sloan stated that she often either chooses not to use videos without transcripts or offers alternatives for students who would need transcripts:

> "In terms of requesting transcriptions of video and that sort of thing, I just haven't done it. I've just made the decision to not use that material. Or I may provide, you know, I may try to include something that says that it's not required. And if you're interested in additional information on this particular topic, you could look at this, this, this, and this. And then, I always try to come up with alternatives for all of our learners. But that's an area I think that -- if I were to have the time that I needed to really make sure the video I want to use was transcribed, that would be a good thing."

The only two participants to mention audio description were Heather and Joan. Heather described her thoughts on this:

> "That was not something that I ended up doing. And they will do it at the AT Department, but they generally send those out. So again, you have to have them ahead of time. And I'm not sure of the turnaround for that."

Five of the participants talked about experiences with faculty who have disabilities and needed accommodations for those faculty. There were 5 sources and 10 references for this sub-ordinate theme. Noval shared an experience of meeting a faculty member with a disability while discussing inclusion and how that faculty member reached out to her because this is a topic that he was not used to being brought up:

> "He was just sharing with me that 'I am disabled, thanks for bringing that up. No one really talks about it,' which is true, we don't really have a conversation. This is probably the first time I've ever had this much conversation about students with disabilities in online setting or diversity within online setting. And he was just sharing that it was very refreshing to hear somebody actually talk about it, and that he himself had a disability, and that he works -- he tries to help his students with that."

While teaching alongside a faculty member who was visually impaired, Joan explained how she altered her presentation style to accommodate his preferences:

> "I was co-teaching a course with somebody who was blind, and he also liked everything very, very plain, again not tons of graphics and tons of just junk everywhere. And I was more than happy to work that way. That was fine with me. I don't -- it was fine with me."

Sloan brought up an important issue that universities and colleges do not always keep track of data regarding faculty who have disabilities:

> "Part of the issue, you know, at least in this institution, we don't even collect data. We're not even sure how many faculty and staff experience a disability. So, if you were to ask our administrators, 'You know, what percentage of faculty have a disability?' They wouldn't be able to tell you that. But if you were to ask, 'What percentage of faculty are African-American, Black, or Latino?' You know, they could whip that out."

All of the participants shared examples of how they work with students to offer help, inform them about accessibility services, and determine the most appropriate accommodations. There were 13 sources and 135 individual codes for this sub-ordinate theme. Some of the themes discussed within this sub-ordinate theme were: Alternative formats for assignments, tests and other materials; communication is key; difficulty letting student know that help is available; emailing course materials; faculty helping students navigate and access materials; faculty informing and encouraging students to work with ODS; family members or friends are allowed to help SWDs; feedback accessibility; and excusing assignments is not a reasonable accommodation.

Catherine, Heather, Joan, and Sloan discussed alternative formats for assignments, tests and other materials. There were 5 sources and 38 references. Discussions within this theme included: Document accessibility, textbook accessibility, as well as a lack of alternative formats being made available. The three participants who have an emphasis on working with accessibility, AT, or PWDs all expressed positive experiences in this area, while Catherine reported that she was not aware of any alternative formats being made available for online courses: “I've never been asked to provide, you know, my documents in an alternate format or anything like that.” In contrast, Heather, Joan, and Sloan all discussed their experiences, awareness, and implementation of alternate formats within their own courses, as well as within their universities. Heather brought up a concern and important factor regarding the need for faculty support to assist them with the creation of accessible documents:

> “It's so simple, but they actually ask a faculty member to do that for every single Word document that they've ever created for the course, or all of the PDF documents. It's a lot of work. So, it could be really good to have some more

> support for faculty. And if you really want them to do this, they have to have the support. They don't have the time to do it otherwise."

Catherine, Heather, Noval, and Sloan were all in agreement that communication is a key factor when working with SWDs to provide accommodations. Sloan's statement encapsulates the importance of communication while working with SWDs online:

> "For the most part, I really believe in ongoing communication, and making sure that they're getting what they need. And I keep the door fairly open too. If I as a professor engage in anything that is not conducive to their accessibility, I ask them to please make sure they follow up with me, and let me know."

Gieuseppi and Noval had difficulty letting students know that help is available because SWDs must first disclose that they have a disability. Differences in school policies pertaining to when faculty can offer assistance varied. According to Noval, who works at more than one school, this was a source of confusion and frustration:

> "It gets really confusing at what point I can step in and not step in, and I have to be very careful about that too, kind of saying I read where you said you had -- sometimes they don't like that either. So, I have to be very careful. I really want them to come to me specifically or tell me specifically, or rather than me hunting and finding out about it. So, one school is very specific about them actually coming and saying they have it, versus kind of tossing it out there. That's the tricky part that I don't like."

Due to students having difficulty accessing course content, whether it was due to accessibility issues or the students not being familiar with how to properly navigate in the online course, Sloan and Gieuseppi discussed how they sometimes use email to send copies of course materials or discussion board posts. As he worked with a student with a visual impairment, Gieuseppi sent her copies of posts from the LMS via email:

> "There are four assignments each week. And one of them is to post something from what she read in the course content, which she always did. But then the other part was responding to other people's posts, which she only did periodically. And that's the part that I think she missed out on. That's the part that she had a hard time navigating the computer to hear what other people's responses were to each other. And she couldn't access, like if -- for most students, I could just click

> on the assignment, and respond to them right on the assignment. And she really couldn't do that. And so, that's why I sent all of hers by email."

Gieuseppi, Heather, Noval, and Sloan recalled their experiences helping students navigate and access materials in OLEs. When a student who was visually impaired and using a screen reader was having difficulty in her course, Heather offered help to assist the student in learning to navigate:

> "There is much more communication between myself, and the person who was using a screen reader to let me know, usually weekly, you know, this is working, I'm not sure how to get into this. And again, it was rarely an inaccessible situation. It was most often, 'I don't know how to get down to this level of the Blackboard site.' You know, when you're working with learning modules as opposed to just posting documents in a folder, a learning module is organized."

Four of the participants made efforts to inform and encourage SWDs to work with ODS. They discussed that there is information within the LMS for the course and sometimes on the syllabus itself for information pertaining to school resources, including ODS. Just as most of these participants discussed their experiences of informing SWDs about available services, Joan provided the following narrative:

> "In one case at one university -- in fact, this just happened this semester, where I had a student who -- I had actually forgotten all about this -- but who said she had a disability and I had to tell her to go through the Disability Office, and I gave her the email and phone number of the office at that particular university, and then she went through the process. And I have no idea why she didn't do that before I mentioned it."

Gieuseppi and Joan reflected on feedback accessibility and accommodations. Some of the accommodations provided include: Sending comments in email as an accommodation, using tactile markings for grading on papers mailed to students, and using Microsoft Word for accessible feedback. Joan expressed her concerns with features that could be problematic for SWDs, and her flexibility for using a variety of methods for feedback depending on what works best for her students:

> "For example, when students upload papers that were due, I like to download all the papers into one folder and then use -- and I ask them to do -- to submit the papers in Word. Then I use the features of Word to -- I put it in -- I do a Save As and save it with my initials after it, so that they know that this is the paper they're getting back from me, and then I use features in Word for reviewing. I don't use track changes, because (a) I hate it and (b) I've also heard that it's problematic as far as accessibility, so what I do instead is I will use the comment balloons, which students tell me are accessible, and if they're not accessible, what I have done is I will add my comments after an asterisk, and I will tell the students that my comments are throughout your paper wherever the asterisk is. So, what they have to do then is do a search for the asterisks, and then they can go from asterisk to asterisk."

One final node within this sub-ordinate theme, addressed by Bob, Catherine, Gieuseppi, and Noval was that excusing assignments is not a reasonable accommodation. Bob clarified this point:

> "The student didn't do the work, and then was using their disability as an excuse for not doing the work, which was not listed in the accommodations, or you know, that was obviously just not listed in the accommodations. So, it's -- you know, so it was -- I don't know. It was a few years ago, but basically it was unrelated to disabilities at all, so I just -- the officer had contacted me to say hey, was this a disability problem? And I basically said no, it wasn't, and that was the end of it."

Six participants discussed HTML elements that have the potential to be accessible. Although not all discussed their knowledge of the accessibility of these elements, those that were discussed include: headings, images, charts, large font, links with narrative text, mouse overs, and keyboard shortcut compatibility. There were 8 sources and 30 references. Heather was the only participant to comment on knowledge about the need for headings within documents or web pages. Four participants mentioned an awareness of needing to include alternative text (alt text). Although Noval, like some other participants, was not familiar with the term "alt text," she described her knowledge of this important element in order to make images accessible: "Even if I post a photo, the

photo has to have a description of what the photo is. So, if I post my picture in the classroom, I have to have it written."

Six participants discussed more time as an accommodation, which was also referenced as the most common accommodation. There were 8 sources and 59 references for this node. This included: Extended flex time on deadlines for assignments; extended time on test and quizzes; faculty feeling that students using more time was an excuse to turn work in late; and students not using extra time when allotted. Bob indicated that extensions on tests and quizzes often involved working with an instructional designer to allow for the time extension within the LMS:

> "Our instruction designer has done it, actually there's default -- those are already kind of default setup as backups, in all our courses now already, so that if somebody does need 50% longer on a test or quiz, that they just set into those tests and quizzes right from the beginning of the semester -- so that they're allowed that. So, for instance if it's a, you know, 60 minute test, they have 90 minutes right from the get-go, and I don't have to do anything, it's basically already set."

Catherine made an interesting statement that some SWDs do not use the extra time allotted to them and attributed this to SWDs wanting to be like their peers:

> "I think it's kind of -- it made like a source of pride for them, like you know, I have this extra time, but I still want to do my work like everyone else. And then they don't really realize that the students who are 'normal,' are the ones who end up not submitting their work on time, and getting the points deducted, because it comes in late, and not on a due date."

Bob, Heather, Joan, and Sloan talked about retrofitting accessibility, as well as concerns and issues that this could cause. There were 5 sources and 29 references. Sloan discussed that accommodations are often made as needed: "It's the student's responsibility unfortunately to tell me what do you need, and then I'm going to respond to that need versus, you know, taking a 100% of the initiation to make sure I'm using the most recent

technology.” Heather and others commented that it is easier to implement accessibility once the class has been developed and is being taught again:

> “When I come around to teach this again, then I might be in a position where I can do it ahead of time, and have the captioning done on my lecture. But I have not done that when I'm developing the course, I'm basically just giving the transcript.”

Heather also commented that students sometimes have to make a complaint in order for a course to be made accessible: “I think it's just when you actually need -- when you have a complaint, then -- and you've got a problem.”

Six participants expressed that it can be time intensive to implement accessibility. There were 10 sources and 46 references within this node. Noval’s statement demonstrates her time commitment while working with a SWD, as well as her attention to the student to make sure that questions were being addressed:

> “She would probably be the student that asked the most questions, and in terms of needing the most help with assignments, ‘I don't understand, can you explain?’ and ‘I'm having trouble with this, can I call?’ And not in a sense that I did not want to assist, but in the sense that I knew because she was disabled and because she was kind of working with her Disabilities Office, that I had to make sure that I was giving her the correct information, that I was making sure I answer -- and this is probably more me, Rachael, than other faculty maybe. It could be me, but I make sure I would look for her messages and I would answer them. I wanted to make sure that no one could go back and say that I did not respond, I did not reply, I did not give a thorough response. So, any time a student has a disability and it's confirmed they're working with an office, I want to make sure, for whatever reason that I have done what I'm supposed to do.”

Five participants shared that because they spent more time with SWDs, they often were able to get to know these students better in online courses than their peers who did not have disabilities. The following extract from Heather’s interview summarizes this:

> “I knew those students better, but only because they [laughter] would call me, or email me more often, because they had these issues. So, I guess that's kind of a plus. I knew those students better. A lot of times you can go through a whole semester, and you don't -- there's a couple of students you really never get to

> know, because they do their work but they don't necessarily communicate. I generally find that if I have a student with a significant disability that affects their ability to access the course, I get to know them a whole lot better."

LMS Accessibility and Usability

There are six sub-ordinate themes within the super-ordinate theme of LMS accessibility and usability. The sub-ordinate themes include: Course components implemented in LMSs; digital media used in online courses and faculty perceptions about accessibility and usability; LMS platforms experienced by faculty and their perceptions about accessibility and usability; LMS helpdesk and technical support; synchronous versus asynchronous chat usability and accessibility; and usability of navigating and accessing materials in OLEs. All participants were referenced within this super-ordinate theme. There were 13 sources and 407 references as depicted in Appendix K.

Participants discussed a variety of different LMS platforms that they themselves use or are aware of being used for OLEs. Among these were: Angel, Blackboard, Desire2Learn, iLearn, Sakai, and proprietary LMSs designed by their universities. Blackboard was used the most by participants, including Catherine, Heather, Joan, and Sloan. Joan shared her experiences making sure that materials created with Blackboard were accessible, as well as usable for all students:

> "The accommodations that we've had to make for them has mostly been through Blackboard, to make sure that Blackboard itself was accessible, and not just accessible, but user friendly. And that means that there were certain features within Blackboard that I didn't use, because I wasn't sure that they were accessible enough or that they were more of a pain in the neck to use than was worth the time. For example, I think the wiki feature in Blackboard is not completely accessible."

SoftChalk LessonBuilder was discussed by Sloan as it was used in conjunction with Blackboard. She shared how she ensured accessibility within these tools:

> "We use the discussion -- again, I'm not using their system of presenting content, I'm using LessonBuilder. So, LessonBuilder has its own template and format that you can build to include images and graphics. And that's the other thing too. You know, if I want to include images or graphics, are they accessible? I've tried to make sure that I describe an image. So, if I have a picture of a heart, an image of a heart, I make sure I put it in the text. You know, this is an image of a heart, and the heart will have four chambers, and the chambers are -- you know, that kind of thing, to try to describe what the image is."

Some tools within Blackboard, such as Collaborate, were not completely accessible for SWDs, as described by Heather:

> "I want everybody to log in at the same time at least once a semester. And this has been a problem for our students who are using a screen reader. So, they've just been able to call in, and not really participate with whatever is visually on the screen. They're just calling the number that you can call on Collaborate, and get connected, but they're not getting any of the advantage of actually seeing, obviously. The PowerPoint, they can't read through the PowerPoint, or any of the materials, but I do send it to them. But it's just -- I don't feel like it's the same experiences that the other students have. But it works."

To help SWDs become acquainted with Blackboard, Heather suggested that training be provided for students prior to taking online courses. She stated,

> "I think it would be really interesting for students who are registered for online courses who have disabilities, to have a class offered to them or support offered to them on what they need to know before they take a Blackboard course, for example. You know, because I mentioned before that there's a lot of issues with just trying to show students how to get to certain parts of the Blackboard course, or certain documents, not that it's not accessible, but that they need to learn how to get there."

Participants discussed their experiences with other LMSs. Gieuseppi mentioned that his university uses iLearn, and Noval stated that at one of her universities, they use Sakai. However, neither of these participants discussed the usability or accessibility of those platforms. Bob stated that Angel is much simpler than some of the other systems, and stated that it was more difficult to make things accessible within this LMS:

> "It just doesn't have some of the features that I know the new ones do have. I mean ANGEL is mostly kind of a text-based system. It doesn't have as nice audio

> features and video as the newer ones do, built into it that you know, could -- kind of I guess, limit our ability to accommodate."

Catherine shared her opinion that Desire2Learn is more complex than Blackboard. She stated, "Blackboard was really simple. I think Desire2Learn is a bit more complicated, but it's still easy to navigate." Both Catherine and Noval worked at universities that used their own proprietary LMSs. Noval seemed to enjoy the flexibility offered by this system:

> "Yeah, it's pretty nice. And the other one is a little antiquated, but again, you can upgrade, upgrade, upgrade to it. So, coming from the online learning system at the one school, all the way over to the military university, I was like whoa, it was like I went back in time a little bit. So, it was a little bit more challenging."

Within these LMSs and through their universities, Catherine, Gieuseppi, Heather, and Joan discussed the availability of a helpdesk for technical support for both students and faculty, as in this example from Catherine: "If a student says -- you know, complains about something with Desire2Learn, then I give them the contact information for tech support."

The participants expounded on the variety of course components that they implement within LMSs and discussed the usability and accessibility of these features. Some of these components included assignments and grading charts, home pages for the course, content posted for reading, lectures, syllabi and weekly modules. Heather described how having a gradebook made the course more usable for all students:

> "I'd say about half of them don't really specifically comment that it's good or it's bad. And then, about half say that they like that, that it's easier for them. And mostly, it's related to the gradebook to be honest with you [laughter]. They find it easier to follow the gradebook. Because when you have three activities each week, you have three places in the gradebook where there's, you know, assignments listed, and it just gets kind of overwhelming to look at."

While Joan believes that the classroom home page is helpful and makes the course more usable for students at the beginning of the semester, she stated that it becomes somewhat

redundant as students move along throughout the course and want to be able to quickly navigate through the LMS:

> "Then you have this kind of getting started page that doesn't really get you -- I mean it's where the Q&A is and if you have technical problems, and then you can get into what's called the classroom page. And maybe the beginning of the semester that's all helpful, but after you've been in the class for a month, you just want to get into the classroom and just do this thing."

Heather discovered that some SWDs fell behind in class due to the extensive amounts of reading and that this is actually what led to them disclosing their disability:

> "I've found that a lot more where I don't have students identifying themselves as having a learning disability, or attention deficit, or dyslexia, or any of that until they are failing the online course, because there's so much reading, it's an entirely different way of learning. And they just find themselves getting so far behind, and then they let you know that they have, you know, a disability and you're trying to kind of backtrack, and provide those accommodations."

Some faculty were more comfortable than others at knowing how to ensure that their course material was accessible for SWDs. Catherine was not sure how to make her lectures or notes accessible to SWDs:

> "I think I would need to know how to make the lectures and notes accessible to the students, because everything is just -- everything is just uploaded in the course shell, and I guess the understanding is that the students will just find a way to read it. But I don't know anything about -- I've never had any training in making things available in alternate formats. And I don't even know what formats are out there."

In contrast, Heather ensured that her lectures were captioned and even provided a verbal audio description for her slideshows: "It's just more my lectures that I need to have captioning on, and the audio description. I just try to -- it's just a PowerPoint. So, I can pretty much describe what's on the slide while I'm teaching it." Joan stated that at one university where she teaches, all faculty are required to include information about accommodations on their syllabi. She was not certain, but she believed that the other universities where she works also have similar requirements:

> "I know the one that I teach at the most, they actually have sent us, all the faculty and instructors, a language that we're required to put in our syllabus -- syllabi, about academic integrity, plagiarism, and accommodations. And I'm pretty sure that they all have that. I'm pretty sure they all do."

Five participants used weekly modules to keep their courses organized. They mentioned having an introduction for students during the first week. In several examples, SWDs disclosed about their disabilities during this first introductory module, as in Gieuseppi's example: "He sent me an email that said, like in his introductory email, he said, he had vision problems, and has to use a screen magnifier."

Another sub-ordinate theme regarding faculty experience with LMS accessibility and usability included digital media used in OLEs and faculty perceptions of these tools. Noval, like other participants, stated that she uses many different types of digital media: "Okay, so if it's a PDF, that's fine, if it's a Word document, that's fine. If it's a photo, that's fine. If it's a voice thread, that's fine. We can use any of those sorts of things." Some of the categories of digital tools that participants used in OLEs were: Audio and video, communication tools, various document formats, and remote software. They also discussed examples of inaccessible digital tools used in OLEs.

The audio and video tools that participants mentioned included: Camtasia, podcasts, teleprompters, videophones, and YouTube. Heather's department was receiving complaints from students stating that they were unable to access the video controls in the LMS. They brought in specialists who could teach their faculty how to make these videos accessible using Camtasia: "We didn't really know how to make it accessible. Students were saying like, 'I can't hit the start button, or the play button.' And so then, we would call somebody in to show us the best way to do this." Noval stated that her university encourages faculty to use a variety of digital media, as long as it is compliant. She stated,

“Because we are becoming a little more involved in multimedia, okay, we are encouraged to use as much as we can as long as it's compliant.” In order to make it easier to create transcripts, Heather first creates a script for her lecture, then she uses a teleprompter to help record it before uploading it in the LMS. This allows her to easily create a transcript:

> “I generally will script out my whole lecture. And because I'm scripting it, I have those notes in the PowerPoint. So, I put the notes actually in the PowerPoint document. I use a teleprompter basically that I've set up on my iPad, so that while I'm lecturing, I can look at the words, and read them. I occasionally go off-script. But, for the most part, that's nice to have because it's basically a transcript.”

When seeking videos created by third parties, Heather and Sloan stated that they are often able to find accessible videos that have transcripts and/or captions. Companies that specialize in working with PWDs often have accessible videos available, as Sloan stated:

> “There is material out there that is already transcribed, or a text version is provided. So, there'd be like an animated slideshow, and then you have the option of clicking on the transcription of the -- or the text. And so, I have been able to find sources like that that have been very helpful.”

Catherine, Noval, and Sloan referenced using YouTube, but Sloan reported that, “…the captioning is not sufficient. For instance, YouTube captioning is not good.”

Communication tools that faculty used to communicate with students included: email, phone calls and video chat services. Email was noted most frequently for communication with students and Gieuseppi used email to send information to SWDs that may not have been accessible within the LMS:

> “Anytime I would do a comment, or I would normally do a comment, I just send it to her in an email, so it would just play it for her. And with him, on some of them, I would email, and some of them, like if it was personal, I would just write it in a bigger font. So, really not much difference at all.”

Phone calls were noted second in frequency for communication with students. Heather provided an example of how she was able to assist students learning to navigate in the LMS over the phone:

> "Just a little bit more communication because of, you know, the possible issues. Like, you know, I had a student who called, who uses ZoomText, and she couldn't figure out how to access something mostly because everything was so big [laughter] that she didn't see all of the different buttons or functions that were available, because she wasn't familiar with it. So, she would call me, and we would talk through it."

Three participants, Bob, Gieuseppi, and Sloan shared experiences with video chat or plans to implement this type of service. Sloan stated that it was something that they were looking into, but that they would need to ensure that the process would be accessible for SWDs: "We are exploring as a department the use of Skype, you know, the use of other group meeting software systems, and we'll of course have to consider how that would impact students who are differently abled."

The three most commonly mentioned document formats used by participants were PDF, Microsoft PowerPoint, and Microsoft Word. At one of the universities where she works, Noval is not allowed to use PDF files because of concerns regarding accessibility:

> "We can have -- let me see, PDFs, things like that, only in terms of what might be difficult for other students to have -- we are not allowed to -- everything has to be in a Word document. We cannot use -- let me step back and say this. Certain things are given in PDF for students to look up, but in terms of how I may give information to a student. At the one school, I'd say it probably needs to be in a Word document. That's the safest bet. The other school, I can post a PDF in there if I want to."

Joan made a similar statement to this, indicating that Microsoft Word is often recommended, rather than a PDF file. She stated that she uses Microsoft Word for most documents: "I upload mostly Word documents, all again in the -- thinking about the accessibility part, to not make the course difficult to navigate or to get the information

off." However, Heather explained that faculty can learn to create accessible PDF documents:

> "I do think you need to learn along the way, you know, what you can do from the start to try and create an accessible document, so that you understand that if you want it to be PDF, if you can start as a Word document, and put these headers in instead of just bolding. I mean, I think that type of information for faculty is really important, because they could avoid the need to send them off somewhere to get accessible."

Most of the participants revealed that they use PowerPoint for the creation or presentation of course materials. Heather has helped other faculty create accessible PowerPoint presentations, because they were required for compliance with Federal laws:

> "I've had faculty contact me, and say, 'I need to hand this in tomorrow, but they won't accept it because it's not meeting 508. Can you make it Section 508 compliant?' [Laughter] And I've stopped what I'm doing to do that, because they need to put it up there."

Other participants, like Noval, did not discuss creating accessible PowerPoints or used other inaccessible presentation software, such as Prezi, likely because they were unaware that it was not accessible: "If I want to put a Prezi together, you know, a Prezi, like a -- I don't know if you've seen the Prezi's now, they're a little bit more advanced than a PowerPoint, they kind of move."

One principal sub-ordinate theme was synchronous versus asynchronous chat usability and accessibility. Almost all participants were referenced in this theme. There were 9 sources and 49 references (Appendix K). Both Heather and Joan commented that they believed that the asynchronous discussion boards were easy to use and accessible for SWDs. As Heather stated:

> "Other students have not had difficulty with that aspect of the course. And in fact I find the discussion board -- at least I have not heard from any other student at any of the universities that the discussion board has not been easy to access."

On the contrary, Gieuseppi had a different experience and stated that a student with a visual impairment had a great deal of difficulty accessing other student's posts, as well as replying to those posts in the LMS:

> "There are four assignments each week. And one of them is to post something from what she read in the course content, which she always did. But then the other part was responding to other people's posts, which she only did periodically. And that's the part that I think she missed out on. That's the part that she had a hard time navigating the computer to hear what other people's responses were to each other. And she couldn't access, like if -- for most students, I could just click on the assignment, and respond to them right on the assignment. And she really couldn't do that. And so, that's why I sent all of hers by email."

A concern from Heather was not about the accessibility of the discussion forum, but about student engagement, which she felt may be lost in this format: "We're trying to make it interesting, and creative, and not just kind of respond to a discussion."

Catherine discussed that there are features available for live conversations with students, but that no students have requested this service. Heather used Collaborate for a once a semester meeting with students. Although she stated that this was not fully accessible for SWDs, they were able to listen in and speak to other students. Heather explained that they do miss out on the materials presented during the real-time meeting, including documents and polls:

> "I mean, they can ask questions, they can hear what everybody is saying. They just don't -- I haven't been able to get them to actually log in, and be able to, you know, raise their hand or do a -- for example sometimes I'll do a poll, and that just hasn't been accessible, being able to access the poll. At least I haven't been able to get it to work. So, it's more of them just being on the phone during those sessions."

Another sub-ordinate theme was faculty perceptions of the usability of navigating and accessing materials in OLEs for SWDs. In general, Heather made a comment that

having documents available electronically, even if they were not accessible, often makes it easier for SWDs to obtain accessible versions of these documents:

> "In some ways, I felt like he was excited to have access to everything electronically, even though sometimes he had to work with a sighted person to get access to it. But sometimes it was just a matter of that person being able to get to the point where they could download the document, and then he could have it on his device, and then he could access it."

Sloan stated that university departments need to consider the needs for all students when designing courses: "I think as a department, you know, keeping in mind the accessibility needs of students, but keeping in mind also the instructional design needs and the access for all students." Heather discussed that many SWDs need to invest a great deal of time to learning how to navigate in OLEs:

> "Just the time that goes in to trying to find your way around and manage it on top of having to do the assignments, you know. So, I think it's just having to deal with, 'How do I get to this file, and this course,' to access what she's asking me to do?"

Organization of the LMS was discussed by Catherine, Heather, Joan, and Sloan. This may be an essential consideration for online faculty in order to make courses more usable for all students. Joan and Heather used simple design and uniformity throughout their courses. As Joan stated:

> "The courses that I have started from scratch, I just then kind of followed that same basic outline, but also I think just because they -- as I said, I try to keep my courses fairly simple as far as the way it works and how to get from place to place."

For Catherine, there was a mandated standardized format for all courses:

> "Everywhere I've ever taught online, like when I decided in the first day, like I have to, you know, post my name and contact information for the students. But for the most part, everything else is just already there, and it's standardized. It's the same for every single course, no matter who's teaching it."

Joan voiced a concern about mandated uniformity leading to accessibility issues:

> "Let's just say College of Ed says, 'Okay, we want our courses to have this uniform look or something, so instead of having a discussion board, you have to use this' or 'Instead of doing this, you have to use this,' and then find out that 'Well, you know what? That's not accessible, and they can't use it because we're trying to build a course that everybody can use."

Although it may make navigation more difficult to learn because the structure varies from course to course and instructor to instructor, Heather stated that it is not realistic to have all courses be uniform. She stated,

> "I think that it's a real issue for students to be able to kind of move from one online course to the other, and it's not going to be that way. But, I don't think it's necessarily the right thing to do to have them all be the same across anything, because that's just not real life either."

Summary of Results

Chapter 4 provided a detailed overview of the data analysis and results from semi-structured interviews and follow-up interviews with seven faculty who have had experience with at least one student with a print related disability in OLEs in higher education within the USA. Eight super-ordinate themes emerged during the analysis related to participants' experiences and perceptions of creating accessible course materials, working with SWDs, and providing accommodations within OLEs. These themes, which were presented in this chapter, included: Accessibility and usability awareness of online faculty; accommodations and accessibility features used in OLEs; differing experiences and perceptions of faculty who have an emphasis on accessibility, AT or working with PWDs; faculty experiences and perspectives of working with SWDs and providing accessible materials in OLEs; as well as faculty training and experiences with accessibility and PWDs.

As demonstrated through the analysis of these themes and 44 sub-ordinate themes, there were many shared and unique experiences among faculty. Furthermore,

there were some differences between faculty who work in fields that have an emphasis on accessibility or working with PWDs compared to other content areas. Chapter 5 includes conclusions, implications, as well as recommendations for improving faculty awareness and implementation of accessibility to improve the experiences of SWDs in OLEs.

Chapter 5

Conclusions, Implications, Recommendations, and Summary

Introduction

The findings presented in Chapter 4 are further refined in Chapter 5. According to Smith et al. (2009), while the results section should be done without referencing relevant literature, the discussion section should include a comparison between the findings of the study and available literature (p. 112). Therefore, this chapter will relate findings to the literature as appropriate. In this chapter, the researcher presents the following: Interpretations of themes; answers to the research questions; strengths, weaknesses and limitations of the study; implications of the findings; recommendations for improving accessibility awareness and accessibility implementation for online faculty; recommendations for future studies; as well as a summary of this study. These sections are based on the recommendations of Moustakas (1994) (as cited by Creswell, 2007) and Smith et al. (2009).

Conclusions

According to Betts, Welsh, et al. (2013), faculty need to consider accessibility and usability during the creation of documents and other materials within online courses. Many online faculty in higher education have much to learn regarding accessibility within OLEs. While they are working towards the goal of learning to incorporate best

practices, they need supports in order to ensure that they have the needed awareness, knowledge and services to assist them with implementing concepts of Universal Design for Learning and providing needed accommodations for SWDs. This finding is in alignment with the recommendations of Farr, Studier, Sipes, and Coombs (2008), who stated that support systems are crucial for both instructional designers and faculty to ensure that online courses are accessible.

There were some commonalities and unique experiences among the faculty participants regarding their work with students who have print related disabilities. There were also some differences between faculty who taught in fields that had an emphasis on accessibility, AT, or working with PWDs compared to other content areas. However, there were areas where those from these two groups had similar experiences. The findings presented in Chapter 4 are used to answer the three research questions that guided this study:

RQ1. How do faculty in OLEs experience encounters regarding accessibility for students who have print related disabilities?

RQ2. How do faculty in OLEs experience the journey of developing the skills needed to provide accessibility for students with print related disabilities?

RQ3. What aspects of accessibility and UDL do faculty members practice in OLEs and what meaning do they ascribe to the lived experience of providing these accommodations?

The findings and conclusions for these three research questions are discussed in the next section. Each of the eight super-ordinate themes relate to the one of the three

research questions. Figures 5.1, 5.2 and 5.3 illustrate the three research questions as they relate to super-ordinate and sub-ordinate themes.

Research Questions

RQ1. How do faculty in OLEs experience encounters regarding accessibility for students who have print related disabilities? As illustrated in Figure 5.1, four of the super-ordinate themes were related to research question one:

1. Accessibility and usability awareness of online faculty.
2. Interactions and relationships between faculty, students, various departments, and outside organizations relating to SWDs and accessibility.
3. Different perspectives and experiences of faculty who teach courses within programs that have an emphasis on accessibility, AT, or working with people with disabilities.
4. Faculty experiences and perspectives of working with SWDs and providing accessibility materials in OLEs.

Nearly all participants felt that faculty in OLEs have an awareness gap regarding faculty knowledge and support for accessibility implementation and accommodations for SWDs. This lack of awareness among faculty is consistent with the findings from Coombs (2010), Gladhart (2009), Seale (2014), Schmetzke (2001), and Ortiz et al (2009). Heather stated that faculty are often frustrated because they want to be helpful to SWDs, but they lack the knowledge to know how to do so. As Catherine indicated, because she did not have experiences with students with visual impairments, she was not familiar with their needs for accessibility or accommodations. According to Ortiz et al. (2009), when faculty have little to no experience working with SWDs, they may not have opportunities

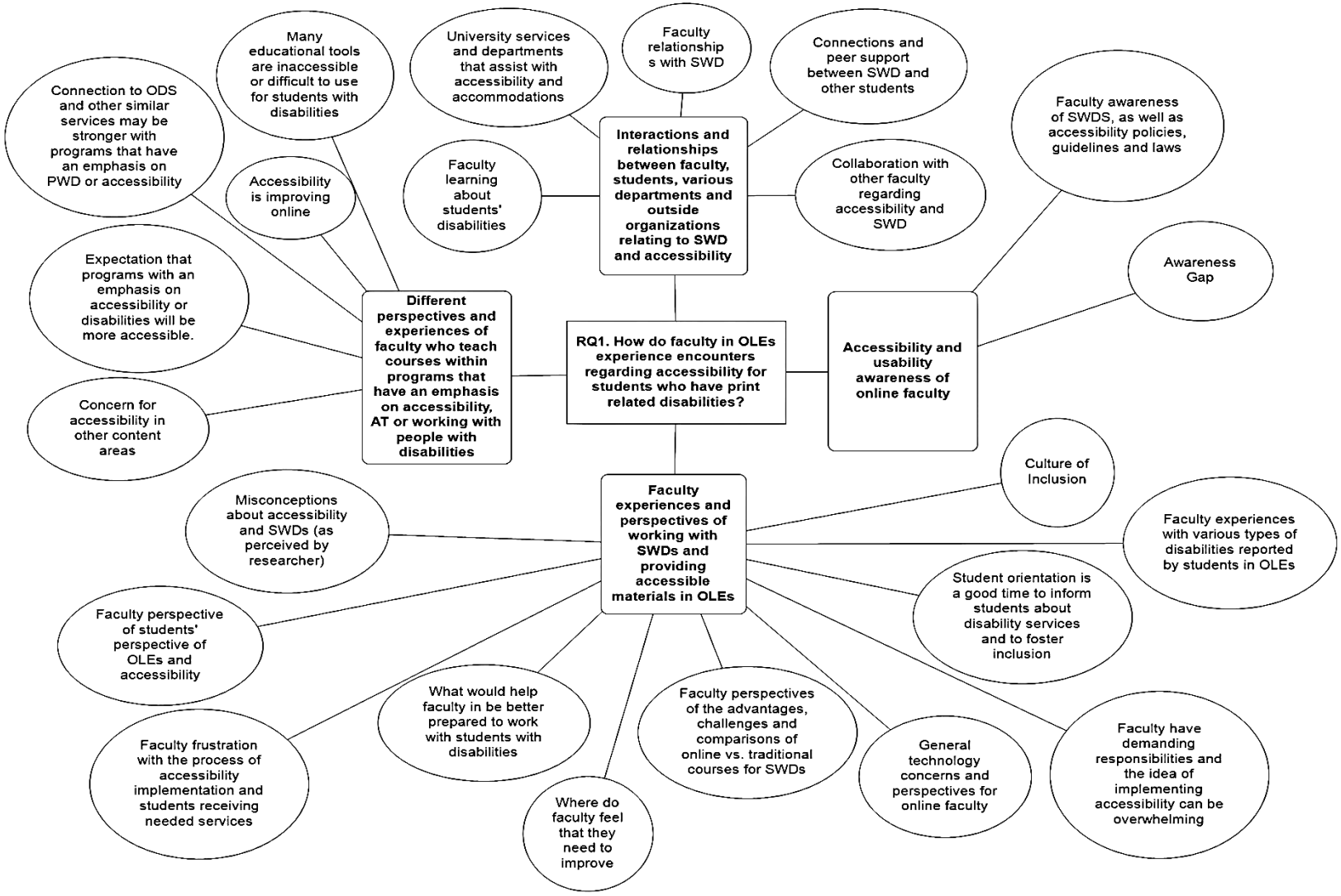

Figure 5.1. RQ1 Themes and Findings.

to improve their awareness of how to improve accessibility features in OLEs. Some of the participants, such as Noval, were aware of their knowledge gaps and frustrated because of how this affects the success of SWDs.

Sloan pointed out that attitudinal change takes time and referenced a need to move from a "medical model" to a "social model" for policy implementation. During a keynote address at the Online Learning Consortium International Conference, Kirwan (2014) expressed opinions following more of a medical model in his statement, that due to the enactment of the TEACH Act:

> "…institutions would have to make online programs 100% accessible even if no student that needs this level of accessibility is interested in the course. And given that it's simply impossible to make some online content fully accessible, this has the potential to short circuit important innovations."

This declaration suggests that universities should follow a "reactive" medical model (Burgstahler, 2011b) in which they offer accommodations as the "…need arises directly from the impairment and the major task of the professional is to adjust the individual to the particular disabling condition" (Seale, 2014, p. 33). However, Burgstahler (2011b), as well as Thornton and Downs (2010) indicated that there should be more of a movement towards a social model of providing universally designed courses that consider the needs of SWDs as they are being developed. As Seale explained, it is best to be proactive in considering the needs of all students.

Heather, Joan and Sloan shared similar concerns regarding the importance of accessibility and principles of universal design for learning during the development of online courses. Sloan's reaction to why faculty should implement accessibility was a straight forward, simple reply, "It's something that needs to be done, and so you do it." This is in agreement with Coombs (2000), who stated that online faculty and

administration should implement accessibility because it "…is the right thing to do," (as cited by Schmetzke, 2001, para. 9) not simply because they are following policies or fearful of lawsuits. Heather was concerned about how faculty perceive the need for accessibility or accommodations for SWDs and stated that they may see this as something that just takes more of their time due to their limited knowledge in this area. As Seale (2014) stated, "…unless accessibility is seen as benefitting many, it is easy to marginalize in favor of other competing needs" (p. 77).

There was a variation of knowledge and awareness of SWDs, policies, laws, and guidelines between the participants. Five of the seven participants were unaware of accessibility policies for online courses at their institutions, and only three participants expressed an awareness of universal design. Bob emphasized the importance of policies to confirm that courses meet best practices for accessibility implementation and UDL during the development stages of course development. The importance of considering accessibility during early planning was stressed by Freire et al. (2008), Schmetzke (2001), as well as Witt and McDermott (2004). According to Heather, even when there are accessibility policies in place, there is often very little or no monitoring of online courses to ensure that they are following recommended protocols. To ensure that OLEs are meeting accessibility guidelines, Sloan discussed the need for testing to determine whether online courses are accessible, but she stated that it would be challenging to do this for all courses. As Poore-Pariseau (2010) stated, there is a need for more formal evaluation tools to measure the accessibility of online courses.

Nearly all of the participants named or discussed an awareness of PWDs, or laws pertaining to accessibility. Some of the participants, such as Catherine, named laws,

without affirming an understanding of the meaning of these laws. Bob stated that his university considers ADA compliance when reviewing their courses for accessibility. Several participants, including Noval, reported that they often learned about accessibility policies via email or other electronic correspondence. Recent lawsuits at multiple universities regarding accessibility issues for SWDs in online courses has motivated administration at Heather's institution to notify faculty of potential issues and to encourage faculty to make sure that their courses are accessible. Fabris (2015) highlighted some of these recent lawsuits and specific issues that would pose accessibility concerns for students with print related disabilities.

Joan stated that faculty are likely more aware of higher incidence disabilities, such as SLDs, compared to lower incidence disabilities, such as blindness. This is consistent with the findings of Fichten et al. (2009), who found that the majority of students who reported disabilities had SLDs. Jackson (2005) defined low-incident disabilities as "blind/low vision," "deaf/hard-of-hearing," "deaf-blind," "significant developmental delay," "significant physical and multiple disability," as well as disabilities that fall on the "autistic spectrum" (p. 18). Nearly all of the disabilities that Coombs (2010) included within the category of print related disabilities would also be considered "low-incidence" disabilities. These included visual impairments, upper body motor impairments, hearing impairments, and SLDs. However, SLDs are considered a high-incidence disability, as well as ADD/ADHD, speech and language impairments, developmental disabilities, and behavioral disabilities (Jackson, 2005).

Three participants were concerned with the stigma caused by labeling SWDs. Gieuseppi stated that his preference is to consider student's individual needs, rather than

focusing on labels. Sloan stated that SWDs often have their own concerns about the stigma that might be attached to them if they disclose their disabilities. Seale et al.'s (2008) participatory design study, which focused on exploring the perspective of SWDs in online courses (as cited by Seale, 2014), found similar perceptions from students who expressed concerns about feeling stigmatized due to their use of AT or assumptions from university staff about what their needs are based simply on the type of disability that they were labeled with.

Participants shared information about their interactions and relationships with other faculty, SWDs, and various departments relating to accessibility and accommodations for SWDs in online courses. Some of the participants, such as Bob, Heather, and Sloan shared that their administrations were supportive of accessibility initiatives within their OLEs. Seale (2014), reported that there is a need for research to explore the roles and responsibilities of administration regarding accessibility in OLEs.

Faculty shared their opinions and perceptions about experiences with ODS. Several participants, including Noval, stated that they were informed about ODS services and procedures for SWDs to apply for services via email. Catherine was concerned that online students may not be willing to make a required trip to physically go to the school if required as part of this application process. Furthermore, Joan, similar to other participants, expressed that she didn't understand why some students do not follow-through to apply for needed services through ODS. The requirement for SWDs who are taking online courses to travel to their universities to apply for services from ODS is an extra burden that their peers without disabilities do not need to do (Tinklin & Hall, 1999; Hopkins, 2011, as cited by Seale 2014).

One interesting theme that emerged during interviews was that the name of ODS, itself, may be stigmatizing. Sloan discussed that name changes from something similar to ODS to another name was in line with the movement to transfer from a medical model to a social model. Other participants mentioned several name versions for their equivalent offices. An issue that may arise if the term "disability" is removed from the name, is that it may make it more difficult for students to locate services if the name of the department does not indicate that they serve SWDs. Thornton and Downs (2010) discussed the importance of name changes and services that focus on proactive accessibility and inclusion, rather than a medical model that is focused on implementing accessibility as needed. However, Thornton and Downs stated that removing the term "disability" from the names of offices that provide services to SWDs may reinforce societies' prejudices.

There were many different types of interactions noted between faculty and ODS, including working with them to help students who needed to improve their technology skills, helping students initiate services, and following through to adhere to approved accommodations. However, some participants, such as Catherine, Noval, and Gieuseppi, stated that they have very little interactions with ODS or other departments regarding accessibility or accommodations for their online courses. Noval expressed her frustration with having such little contact with ODS in OLEs compared to traditional classes. Staff from ODS should be equipped and trained to address accessibility concerns for SWDs in both traditional courses and OLEs (Poore-Pariseau, 2010). Gieuseppi, Heather, Joan, and Sloan, stated that they often felt that they could provide needed accommodations without assistance from ODS. The three participants from within the field of accessibility, AT, or working with PWDs were all proactive in their approach to providing accessibility and

accommodations within their OLEs. Sloan stated that she starts incorporating accessibility as soon as she learns that there is a SWD enrolled in one of her courses.

Faculty also interact with the ADA department, AT services IT, instructional designers, and other departments regarding accessibility and accommodations. Bob described that all courses are reviewed for accessibility by the ADA office before launching. Heather, as well as a couple other participants, reported that they had supports available through their AT department to assist with accommodations, such as captioning, transcripts and audio description. Several participants discussed the need for ongoing support through these departments for faculty in OLEs to ensure accessibility. Bob stated that he is in contact with instructional designers regularly to work on these issues and Joan stated that she often works with a technology specialist to discuss accessibility concerns within the LMS. Noval stated that her experiences with IT and instructional design services were more responsive in online courses compared to traditional courses.

There was a range of experience collaborating with other faculty on the topics of accessibility and accommodations. Catherine had no experience collaborating with other faculty, and Noval only had one experience discussing accessibility with another faculty member who disclosed to her that he had a disability. In contrast, Heather, Joan and Sloan reported regular interactions with other faculty and colleagues on the topic of accessibility or accommodations for SWDs. Heather described ongoing conversations on this topic at faculty meetings.

Many participants discussed that faculty rapport with SWDs is very important in OLEs. Noval stated that SWDs are more likely to disclose their needs when they have a

good relationship with faculty. Catherine suggested faculty be required to be in contact with SWDs at least once per week and recommended that faculty should mention ODS and other support services in an initial welcome email to all students. Perhaps having better rapport would encourage students to disclose their disability and feel more comfortable to request needed services.

Most of the participants shared that they felt that SWDs often to not disclose about their disabilities in OLEs. Seale (2014) cited research that is complimentary to this that included Jacklin's (2011) findings that SWDs do not always perceive disclosure to be in their best interest. Noval and Gieuseppi stated that they often suspect that a student has a disability, but often they do not disclose or seek out services. This is consistent with the findings of Roberts, Crittenden, and Crittenden (2011) who discovered that almost 70% of SWDs in OLEs do not disclose to faculty that they have a disability. If faculty are not aware that there are SWDs enrolled in their courses, they will not be able to provide accommodations (Roberts et al.). Heather, Noval, and Sloan made statements indicating that they believed that SWDs are more likely to disclose in traditional settings. Additionally, participants stated that students with invisible or hidden disabilities often do not disclose about their disabilities in both OLEs and traditional courses. Betts, Welsh, et al. (2013) stated that students with both visible and invisible disabilities "…may be too proud to ask for assistance" (p. 38).

Faculty often learn about a SWD in their course through electronic communication with ODS, yet as reported by Catherine, there is often little contact afterwards. Noval was frustrated by the minimal information received from ODS, which did not include information about the nature of disability for SWDs. FERPA

(http://www2.ed.gov/policy/gen/guid/fpco/ferpa/index.html) is designed to protect students' privacy for the disclosure of non-essential information from ODS to faculty. It may be beneficial for SWDs to consider whether disclosing some information directly to faculty would be helpful in directing them how to best provide needed accommodations. Sloan and Bob also expressed frustration with the amount of time it sometimes takes to initiate services with ODS. Noval stated that she often never hears back from ODS when she refers a student.

All participants shared examples of SWDs self-disclosing to them about their disability or needed accommodations. Although some disclose early, as in Joan's experience, other SWDs often wait until they are failing or towards the end of a course to disclose. It is often too late to do anything to help when they disclose later in the course. When students report early, faculty are in a better position to make accommodations as needed and were also more willing to extend deadlines. Noval shared examples of how she keeps track of when students report that they are having difficulties, so that she can later make a decision as to whether or not to offer assistance or accommodations.

Sloan stated that modeling inclusive behavior from administration to faculty to students helps to encourage inclusive behaviors from student-to-student. She expressed the importance of peer relationships between students to help foster environments where students will feel more comfortable to disclose about their disabilities. In her reported experience, there was a stronger connection between students with and without disabilities compared to traditional classes.

Heather, Joan, and Sloan, who teach within fields that had an emphasis on accessibility, AT, and working with PWDs had some differences in perspectives and

experiences compared to faculty from other content areas. These participants stated that they believed that accessibility practices and awareness were improving in OLEs. Heather stated that there is more awareness about accessibility due to recent litigation at several universities. They also expressed concern for how faculty and staff within other content areas perceived accessibility and for the implementation of LMS software that does not have accessibility features.

According to Heather and Sloan, faculty are content experts and should not be expected to be accessibility experts, which is consistent with findings from Barzilai-Nahon, Benbasat, and Lou (2008). Because of this, Heather recommended that universities should focus on making needed supports available to assist online faculty with implementing accessibility. Without necessary supports, Heather stated that her concern was that faculty would have a negative attitude towards accessibility implementation and working with SWDs. Betts, Cohen, et al. (2013) recommended creating standardized procedures for providing support services online to both faculty and SWDs.

Two of the participants in this category, Heather and Sloan, stated that their departments had a close connection with their ODS office and related services. Joan, on the other hand, stated that she encourages her students to work closely with this office, rather than working with them directly. These participants stated that because their departments have a focus on accessibility, AT or working with PWDs, there was an expectation that their programs would be more accessible than other programs within the university. However, Seale (2014) made the assertion that it is "…naive to assume that the websites of university programmes that have some relevance to disability or special

education should be any more accessible" (p. 116). Faculty within this category stated that they are sometimes considered experts in the field of accessibility by faculty in other departments. They also stated that SWDs were more likely to enroll in their programs than other content areas. Sloan stated that students in her program were more likely to share and disclose information about their disabilities with faculty, as well as other students.

Heather, Joan, and Sloan discussed issues with inaccessible educational tools or tools that were accessible, but difficult to use for SWDs. Joan shared that she must consider the accessibility of software before incorporating them into her class. Heather stated that sometimes, when there is an inaccessible component, they try to find a work around, so that they can still use that software. Heather and Sloan stated that they were often disappointed when they discovered that a useful interactive tool was not accessible for SWDs. Betts, Welsh, et al. (2013) recommended that universities review the Voluntary Product Accessibility Template (VPAT) as a starting point when deciding whether or not to implement new technology for online educational programs. Ensuring that software and educational tools are accessible prior to implementation may help to avoid accessibility issues.

Most of the participants shared the opinion that fostering a culture of inclusion within OLEs would help SWDs to feel more comfortable disclosing their disabilities in OLEs. As Betts, Welsh, et al. (2013) stated, accessibility "…requires a change in cultural thinking" (p. 34). More than half of the participants expressed that student orientations would be an optimal time to inform students about ODS and other services. Heather stated that the student orientation would also be a great time to provide training to SWDs

and all students to teach them how to use the LMS. Fichten et al. (2009) recommended that SWDs be provided training to learn how to access LMSs in OLEs.

Having experiences with students and PWDs seemed to bring about a higher level of awareness among participants who worked within the field of accessibility or with PWDs. As Heather stated, working with SWDs helps faculty to learn what is usable and accessible for these students. Sloan and Gieuseppi enjoyed having a diverse student population and recognized that it enhanced the experience for all students. Gieuseppi stated that he enjoyed teaching online because he had the opportunity to work with each student based on their preferred learning styles and preferences. Participants worked with students who had a variety of different types of disabilities as depicted in Figure 4.2. Due to a lack of experience with SWDs, many faculty do not have opportunities to learn and gain awareness about how these students are able to access online courses. Catherine did not have experiences with students with visual impairments, so she stated that she could only make guesses as to what services would best suit them. She also believed that students with visual impairments would have more obstacles in online classes compared to students with hearing impairments. Other faculty, who had more experience with SWDs shared detailed information about the types of accommodations and accessibility features provided for those students. Two participants had experiences with students with hearing impairments in online courses, although others referenced accessibility features that would be well suited for these students, such as captions and transcripts.

All participants discussed experiences working with students with physical disabilities and SLDs in online courses. According to Joan, many faculty have a higher level of awareness of SLDs compared to other disabilities. Heather shared concerns about

difficulties with students with SLDs keeping up with coursework. All but one of the participants discussed upper body motor impairments among students in OLEs. Noval shared an experience with a student who had difficulty using one of her hands who stated that it takes her longer to find things in the LMS. Noval suspected that she may have also had issues with computer literacy.

Many other disabilities were mentioned by participants. Bob stated that OLEs are an ideal environment for many students with psychological disabilities, including social anxiety, because they do not have to walk into a classroom filled with people. Noval noted differences between male and female military students, and stated that male students often declined assistance. This is a consistent finding with Betts, Welsh, et al. (2013), who stated that veterans need to develop trust with ODS staff in order to feel comfortable disclosing their disability, as well as to benefit from needed services and accommodations.

Participants discussed their perspectives of student's perspectives of OLEs. This takes Smith et al.'s (2009) concept of a "double hermeneutic" to another level as the researcher attempted to make sense of the participants' making sense of their students' experiences. Some hoped that SWDs had good experiences in their courses, while others shared examples of SWDs having difficulty accessing content and keeping up with the workload. There were specific issues discussed for students who were recently diagnosed with disabilities or health issues related to them adjusting to their disabilities, as well as students adjusting to the differences between services in high school and college. Gieuseppi stated that SWDs have more "handholding" in high school. According to Leake (2015), SWDs who are transitioning from high school to higher education need

to adapt to a difference in procedures from having more directed Individualized Education Plans (IEPs) in high school to needing to take a more proactive role in initiating services within higher education.

There was a variety of awareness and knowledge about how SWDs use needed AT that ranged from no experience or mention of this to a very high level understanding from Heather, who teaches courses on this same topic. Sloan stated that it is not necessary for faculty to understand how students use AT software, because they are able to figure it out for themselves. Although Coombs (2010) indicated that it is not absolutely necessary for faculty to be aware of different AT solutions, he stated that having an understanding of the types of AT software and equipment that SWDs use would help faculty be better prepared to create more inclusive OLEs (p. 2). Simulations, such as those suggested by Burgstahler and Doe (2004), as well as Papadopoulos et al. (2008) would be beneficial in helping faculty become more aware of AT solutions, such as screen reader software, screen magnification software, other AT used by SWDs, as well as recommended techniques for improving the usability and accessibility of OLEs.

Most participants stated that they did not notice many differences between students with and without disabilities in OLEs. Catherine stated that she felt that students had similar experiences and grades in her courses, and Gieuseppi stated that his interactions with a student who had a visual impairment was very similar to the interactions that he had with other students. Bob stated that OLEs were particularly beneficial for most SWDs because, like other students, they have adult responsibilities. In contrast, some of the participants' examples, they commented that they had different experiences with SWDs compared to other students. Gieuseppi stated that he had much

more communication with another student who was visually impaired, who used screen reader software, and she required more assistance to access course materials. Sloan stated that SWDs do not always use services from ODS as needed. Catherine speculated that SWDs may not think that they need accommodations for online courses because they are working from home.

Self-advocacy, an important characteristic for SWDs, was discussed by Noval and Sloan. Noval shared her experience with a student who had multiple sclerosis, who was very assertive in her drive to obtain needed services. Noval stated that unlike other instances where she did not know whether or not students were working with ODS, that this student made sure to follow-up to obtain needed services. Seale (2014) discussed research that emphasized that ODS has an important role in advising SWDs of their "rights and responsibilities," as well as advocacy.

Sloan described a more unique situation to programs that have an emphasis on accessibility, AT or working with PWDs, which was that SWDs often helped to educate other students in her program about disabilities, services and available AT. Three participants stated that SWDs do not want faculty or other students to think badly of them because of their disability. Hall and Tinklin (1998) found that SWDs often fear ramifications if they disclose their disability, and frequently do not request services "…because they wanted to be treated like other students" (as cited by Seale, 2014, p. 30).

The participants discussed faculty perspectives of advantages and challenges of online learning for SWDs. Bob stated that OLEs are often well-suited for SWDs because they remove the barrier caused by anxiety of attending large classes. Furthermore, several participants referred to the advantage of OLEs having more flexibility than traditional

courses, which is consistent with Burgstahler (2007) who stated that OLEs allowed for the flexibility of anytime-anywhere instruction without the requirement of having to travel to and from classes. Heather stated that students have more time available to read and access course content and can do so anywhere at any time. Participants also noted many environmental accommodations that are needed in traditional settings that are often not needed for online courses. Another advantage that Heather pointed out was that it is often easier to make documents and content accessible for online courses because they are almost always available in a digital format. Even if that format is not already accessible, she stated that it is easier to convert digital documents into an accessible format than printed materials. Noval and Sloan stated that SWDs are frequently more open about their disabilities in online courses. Most of the participants have witnessed a growth in SWDs within their online courses in recent years. Betts, Cohen, et al. (2013) discussed two reasons why there is no available data to determine the actual percentage of SWDs in OLEs, which included differences in how programs identify as OLEs, as well as issues with SWDs needing to disclose that they have a disability (p. 50).

There were several challenges that participants noted for accessibility in OLEs. Faculty felt more connected to SWDs in traditional courses and they reported that it was often difficult to know what services students were receiving in OLEs compared to traditional courses. Three participants stated that ODS and other services were more well-known by both students and faculty in traditional courses. Accessibility in OLEs takes advanced planning, as noted by Bob, Heather, and Sloan. Additionally, faculty and students need to adjust to the differences in pedagogy between online learning and traditional courses. Catherine shared that students often misunderstand how online

courses differ from traditional courses, and Heather stated that faculty need to learn to "shift pedagogically" from teaching in traditional courses to teaching online. As Powell (2010) stated, it is difficult for faculty to transfer their skills from teaching in a face-to-face class to an online class.

Nearly all of the participants expressed frustrations during their experiences of working with SWDs, as well as providing accessible materials and accommodations in OLEs. Noval expressed an overall frustration with her experiences of working with SWDs online and stated that it is much more difficult than in traditional courses. Heather battled with the decision of whether or not to caption every video within her online courses, when they often change for each iteration of a course. Gieuseppi stated that it was very frustrating when he offered help to students and they did not respond to him.

The majority of participants reported that most faculty, including themselves, have demanding responsibilities. Many faculty have other full-time jobs and full course loads. Heather stated that teaching is not the main role for many faculty. Because of this, as well as the rapid growth in the field of technology, Heather and Sloan stated that it is often difficult for faculty to keep up with technology in general. Therefore, implementing accessibility or accommodations is often considered to be "…just one more thing to add on" as discussed by Sloan. As Coombs (2010) stated, without knowledge and awareness of accessibility, faculty will likely have a fear of having to implement accessibility within their courses.

Misconceptions were noted, but it is important to state that these are interpreted misconceptions as perceived by the researcher. Catherine stated that she did not expect the same quality of work from SWDs. Due to implementations of UDL and accessibility

during the planning stages, Bob stated that SWDs did not need accommodations. Although this may often be true, it is important to note that while efforts are made to create courses following principles of UDL, accommodations may often still be needed for individual circumstances. Seale (2014) discusses that both critics of universal design and advocates, and she cited Burgstahler's (2010) report that universal design "…does not eliminate the need for accommodations…" (p. 185), and anticipates the needs for accommodations. Noval expressed that SWDs may be slower than other students in OLEs. Again, while this may be true in some instances where SWDs are not properly trained on the use of needed AT, when SWDs are properly trained and familiar with the LMS, they can become quite proficient and swift at navigating. This of course is dependent on the course being accessible. Another misconception discussed by Catherine was that SWDs may have more time available to them because they were unable to maintain full-time employment.

Participants discussed ideas and suggestions for helping faculty to be better prepared to work with SWDs, as well as areas where they felt that they needed to improve. Sloan stated that faculty need exposure to PWDs, awareness of policies, and to consider how they could make improvements to best serve all students. Faculty need supports to assist them with creating accessible course content and providing accommodations to SWDs. Some faculty, like Gieuseppi, may feel that they are not as familiar with services as they should be. Heather stated that while faculty are learning how to improve their skills to be more independent with the creation of accessible content, they will need assistance to create accessible documents. Betts, Welsh, et al. (2013) were in agreement with this and stated that "…support services provides a faster

and more seamless process…" (p. 54). Offering faculty support and services is only part of the solution. Faculty must be able to prepare enough time in advanced to submit their course materials in order to receive assistance to make them accessible.

RQ2. How do faculty in OLEs experience the journey of developing the skills needed to provide accessibility for students with print related disabilities? As illustrated in Figure 5.2, one of the super-ordinate themes, "Faculty training and experience with accessibility and PWDs," is related to research question two. There were accessibility workshops and trainings offered at the universities of at least four of the participants, although not all of these participants partook in these trainings. Heather shared that workshops were available for faculty on many different topics, including captioning, document accessibility, and Web accessibility. Fichten et al. (2009) recommended training for online faculty to teach them how to create accessible documents, as well as how to access online accessibility resources. Coombs (2010) also recommended that faculty receive training in the area of document accessibility.

Participants expressed that they and other faculty had a desire for accessibility training, but there are often limited incentives to attend workshops on this topic. Sloan commented that the application of universal design or accessibility within in OLEs is not one of the factors considered for tenure. Additionally, accessibility training for faculty is often optional, so many faculty do not attend trainings on this topic, even when they are made available. There needs to be an incentive system in place to encourage faculty to improve their awareness and skills for creating accessible content, such as a financial incentives discussed by Sloan or other career advancement incentives. Seale (2014) made suggestions to encourage faculty and other staff to attend accessibility training, which

included offering lunch, asking faculty about the training that they feel would be most beneficial, recognition and appraisal process for accessibility training and implementation, and accreditation of training (p. 79). Catherine stated that SWDs are hindered in their success within online courses when faculty are not properly trained in this area. Faculty are often not familiar with how to teach online in general, let alone have the knowledge for how to make content accessible. Heather stated that it is not a realistic expectation that faculty will have these skills without proper training. Seale (2014) indicated that although there is a need for more training and awareness, it is necessary to determine what training methods are related to improved accessibility within OLEs.

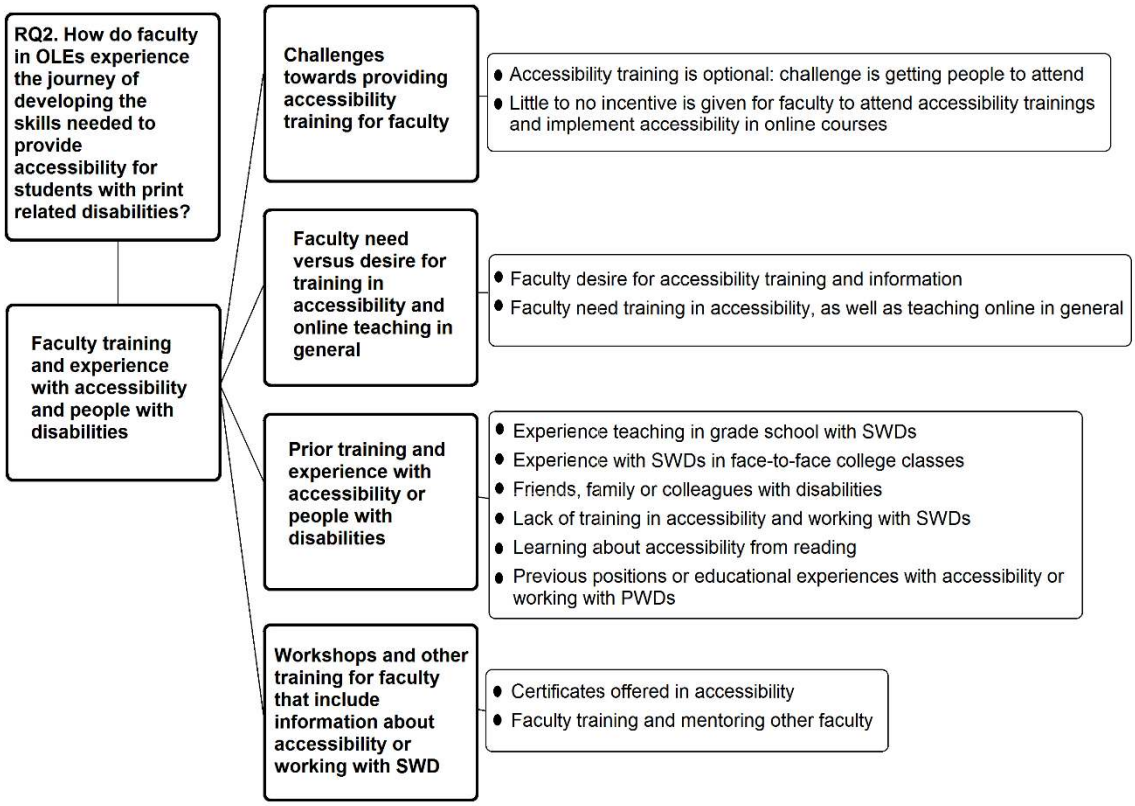

Figure 5.2. RQ2 Themes and Findings.

Several participants gained knowledge and awareness of SWDs and accessibility through prior experience working with SWDs in K-12 schools or face-to-face courses, as

well as working with family, friends, and colleagues with disabilities. The participants who were employed within fields of accessibility, AT, or working with PWDs reported more experiences with friends, family, and colleagues who had disabilities. Although many of these participants reported that they did not participate in accessibility training within at their current institutions, these previous experiences appear to be related to them being more conscious of accessibility issues, as well as needed accommodations for SWDs in online courses.

RQ3. What aspects of accessibility and UDL do faculty members practice in OLEs and what meaning do they ascribe to the lived experience of providing these accommodations? As illustrated in Figure 5.2, three of the super-ordinate themes were related to research question three:

1. Faculty autonomy within OLEs as it relates to creating accessible content
2. Accommodations and accessibility features used in OLEs
3. LMS accessibility and usability

Four participants expressed a desire for creative freedom when designing online courses. However, most participants stated that courses were often prescripted and they were unable to make changes. Catherine stated that most of the courses that she has taught online have been pre-scripted in attempts to make them standardized throughout the university. Sometimes, as explained by Gieuseppi, faculty are able to make requests for changes to their courses, even when they are pre-scripted. In contrast, Joan's experience was that she had autonomy over her courses, which was valued by most participants. A concern addressed by Ferguson (2005) is that faculty autonomy should be weighed against accessibility compliance to determine an appropriate balance.

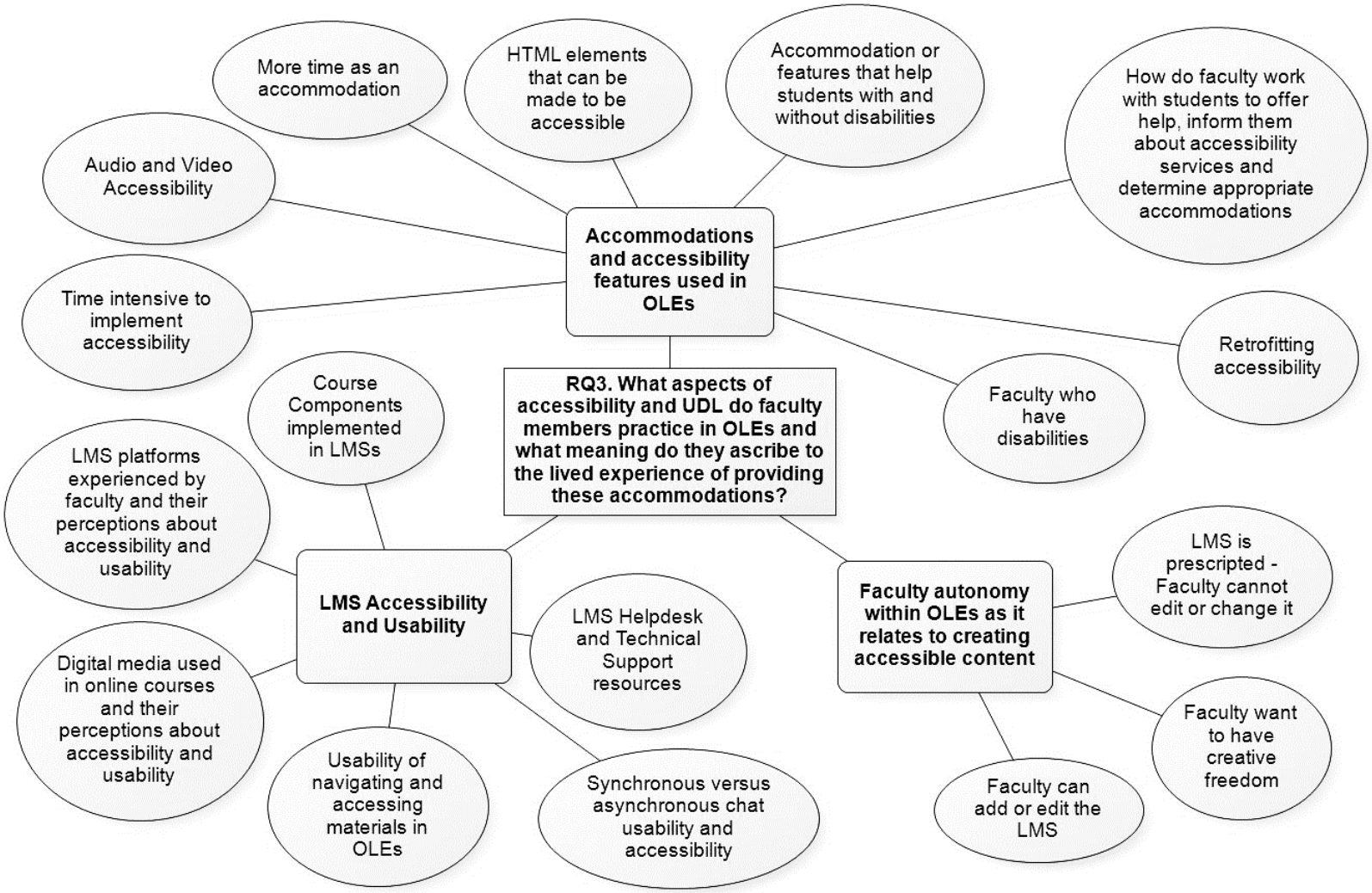

Figure 5.3. RQ3 Themes and Findings.

Faculty discussed their perceptions of the usability of navigating and accessing materials in OLEs for SWDs. As Sloan stated, it is important for universities to consider the needs for all students when designing courses. Heather explained that it can take time for SWDs to learn how to navigate within LMSs. Therefore, four participants referenced organization within LMSs as being very important to ensure usability for all students. Joan and Heather stated that they use a simple design and focus on making sure that their courses are uniform, so that students are able to find things easier. Catherine's university had a mandatory standardized format for all courses, but Joan was concerned that standardization may lead to more accessibility issues. Although having a standardized format may make it easier for students to be familiar with the layout of courses from different professors, Heather stated that this is not representative of real life.

All but one participant discussed accommodations and features that are beneficial to students with and without disabilities. Catherine talked about how captioning and transcripts help all students, not just those with hearing impairments. Some of the participants also discussed how some technologies that were designed for PWDs, are used by people without disabilities. Sloan gave the example of voice recognition being used by many people with and without disabilities. Rowland, Mariger, Siegel, and Whiting (2010) explained that accessibility components and universal design not only benefit SWDs online, but they have the potential to benefit those without disabilities, as well. Rowland et al. explained that captions can benefit those without speakers, headphones, or when people are in noisy environments. Additionally, Rowland et al. stated that accessible web pages usually require less bandwidth and load quicker (p. 24). The fact that many accessibility features are beneficial to those with and without

disabilities may be a key point when working with OLE staff and faculty to help them understand the importance of implementing best practices for accessibility and UDL.

Three participants shared experiences of how working with students and providing instruction based on their learning preferences is helpful for all students. Seale (2014) discussed differences and similarities between UDL and "personalized learning," which she stated "…seeks to meet the needs of disabled students in a way that cannot be met by standard approaches" (p. 94). Although Seale discussed differences in opinions among researchers for UDL compared to individualized design, she disputed that these two approaches are not as different as some claim them to be (p. 198). It will be important moving forward for higher educational institutions to determine which approaches and techniques are related to higher levels of accessibility awareness and implementation to meet the needs of SWDs in online courses.

Five participants discussed captioning and transcripts for videos and only two mentioned audio description. Betts, Welsh, et al. (2013) provided a list of resources for captioning and accessible video resources. Heather stated that captioning is required for videos and she explained how she uses pre-scripted notes when creating lectures, so that she has a ready-made transcript. At Bob's university, he stated that they ensure that transcripts are available for all videos ahead of when SWDs would need to access each video. Sloan often chose not to use third-party videos that did not have captions or transcripts, or she listed the videos as optional resources along with alternate materials for students who would need transcripts. Heather and Sloan talked about audio description. Most of the participants were unaware of this accessibility feature or didn't discuss it during our interviews. However, even those who mentioned it did not always have this

feature available in courses due to time constraints and concerns about ever changing courses. Heather explained how she provides her own audio description while video recording her lectures using PowerPoint presentations. The Audio Description Coalition (http://www.audiodescriptioncoalition.org/aboutAD.html) described audio description as using "…the natural pauses in dialogue or narration to provide essential visual information" (para. 2), and they offer training for this service. Two issues that were raised for captioning, transcripts and audio description alike were the need for additional time and resources. Perhaps if faculty were trained to prepare for the implementation of these features, it would take less time and resources and be a more seamless process.

Most of the participants shared experiences with working with faculty who had disabilities and needed accommodations for themselves in OLEs. According to Sloan, many universities and colleges do not keep track of statistics for faculty who have disabilities. As Noval experienced when she met a faculty member with a disability, he was exhilarated to meet someone and actually discuss the topics of accessibility and diversity. She stated that this was the first time that she had a conversation with someone about accessibility or accommodations, and it was the same for the other faculty member. Joan, who had very different experiences due to working with many faculty and colleagues with disabilities, stated that while co-teaching with another faculty member who had a disability, she was happy to work with him to make sure that the course was accessible and easy to use. It would be beneficial to have more information in order to incorporate needed accessibility and usable design not only for SWDs, but for faculty who have disabilities. More dialogue and collaboration would likely benefit both faculty and students.

All participants shared their experiences of how they offer help, inform SWDS about services and provide accommodations. Four participants discussed alternative assignments, tests and materials. All faculty who work within the field of accessibility, AT or working with PWDs shared positive experiences in this area. Some faculty, such as Catherine, stated that she was unaware of how to provide alternative formats for SWDs in online courses. These same participants stated that communication is critical when working with SWDs. Gieuseppi and Noval experienced difficulties letting SWDs know that help was available. Noval stated that policies are often confusing regarding when faculty are allowed to refer SWDs for services. Sloan and Gieuseppi often used email to provide course materials and discussion posts from the LMS to SWDs. Participants had experience assisting SWDs in learning to navigate within the LMS, encouraging them to apply for services with ODS, and listing information for ODS on the syllabus or within the LMS. Gladhart (2009) found that only one-fifth of faculty included information for contacting ODS, so it appears that there may be an improvement. It would be ideal if all faculty included this vital information on their syllabi.

Poore-Pariseau (2010) stated that it can take more time and planning at the beginning for accessibility, but that this will have an overall positive effect on usability for OLEs. Due to how time intensive it was for most of the faculty to implement accessibility, five participants stated that they were able to get to know SWDs better in OLEs compared to their peers who did not have disabilities. Six participants discussed more time as an accommodation including extended time for assignments, tests, and quizzes. According to Bolt and Thurlow (2004), extended test time was the most common accommodation for SWDs. According to Bob, it is possible to allot for more

time within the LMS for these items. Catherine stated that SWDs often do not use the extra time allowed to them, and she felt that this was a source of pride for them wanting to be like other students. Both Gieuseppi and Joan shared how they made accommodations in their delivery of feedback for SWDS. Joan shared that she works with students to determine the type of feedback that works best for their needs. More than half of the participants concurred that excusing assignments is not a reasonable accommodation. Resources, such as Coombs (2010) and Betts, Welsh, et al. (2013) provided detailed instruction and links to other resources for faculty and staff to guide them on how to incorporate accessibility and accommodations into OLEs. These and other resources like them would be helpful for faculty to become more acquainted with accessibility resources and best practices.

Accessibility and accommodations were often retrofitted in the participants' experiences. This is not the best practice according to numerous researchers who recommend planning early for accessibility implementation and UDL. Furthermore, Poore-Pariseau (2010) stated, "Recognition must be given to the fact that retrofitting accommodations in online environments is not only an arduous task, it is often impractical, necessitating training in concepts such as Universal Design for Learning to be placed at the forefront" (p. 155). Sloan stated that SWDs have a responsibility of reporting their needs and requesting accommodations. Seale (2014) discussed comparisons between the United Kingdom, where students are not required to disclose that they have a disability, to services in the USA, where students are required to disclose in order to be eligible for accommodations. Heather stated that accessibility or accommodations are often not considered until a student makes a complaint. This

indicates that things may not have changed since Ferguson (2005) reported that accessibility problems are often not dealt with until an issue arises on a case-by-case basis.

All but one of the participants discussed HTML elements within OLEs that have the potential to be accessible, but very few actually expressed an understanding of how to implement accessibility within these elements. Only Heather was familiar with the importance of headings. Four participants were aware of the concept of alt text, even if they were not familiar with this terminology. Sloan added alt text to images within the LMS to describe images within her course content. Resources, such as Coombs (2010) and Betts, Welsh, et al. (2013), would be helpful for faculty and staff to help them learn to implement accessibility features within HTML content, such as images, links, headings, tables, etc.

Participants had experience with a variety of LMSs, but Blackboard was used by more than half of the participants, including Catherine, Heather, Joan and Sloan. According to Ruth (2010), Blackboard was the most common LMS used within OLEs in higher education. Joan explained that most of the accommodations that she has provided were within Blackboard to ensure that the course was both accessible and user friendly. She stated that she avoided features within Blackboard if she was not certain that they were accessible for SWDs. Collaborate was not fully accessible for some of Heather's students who had visual impairments and used screen reading software. They were unable to participate with interactive features or view the live PowerPoint presentation during synchronous lectures and group discussions. Heather stressed the importance of SWDs to have training to learn how to use Blackboard or other LMSs prior to taking

online courses, so that they could learn how to navigate. Seale (2014) agreed that there is a need for student training to learn how to use their AT, along with other technology needed within OLEs, and she explained that "…the greater the complexity of the solution the more we ask of the user" (p. 87).

Gieuseppi shared his experiences using iLearn, and Noval used Sakai at one of her universities, but they were not familiar with usability or accessibility features in these LMSs. According to Bob, Angel was much simpler than some of the other LMSs and he stated that he felt that it was more difficult to make things accessible in Angel due to it being primarily a text-based system. It would be interesting to know whether having limitations for audio and video may actually make this system easier for SWDs to use, or if it does make it more difficult to accommodate within this platform. In Catherine's opinion, Desire2Learn was more complex than Blackboard. Catherine and Noval enjoyed the flexibility of proprietary LMSs, and Noval stated that the proprietary system that she used at one university was far superior to the commercially available LMS used at another university. Four participants also shared that they have a helpdesk available for students and faculty for assistance with their LMSs. Having a helpdesk or technical support is likely a critical need for both students and faculty in OLEs.

There were many different course components mentioned by participants and they discussed how they implemented usability and accessibility within these features. Heather stated that the gradebook improves the usability of online courses for faculty and students by helping to keep track of assignments and grading for those assignments. Five participants divided their courses into weekly modules for better organization. These modules often included a student introduction assignment during the first week, which

Gieuseppi stated was how he learned that one of his students had a visual impairment. Although Joan felt that the classroom home page was helpful for students, she indicated that it was somewhat redundant once students learn how to navigate within the course. Perhaps it would be helpful to have a check box that a student can select to choose to hide this page as they get more comfortable navigating within the course.

Some participants, such as Catherine, did not know how to create accessible lectures and documents, while others, such as Heather, understood and incorporated captions, transcripts and verbal audio descriptions while creating her video lectures. Heather and Sloan were usually able to find accessible videos by third-party companies that specialize in the field of working with PWDs. Three participants discussed using YouTube videos, yet Sloan shared that the built in captioning tools within YouTube are not very good. The participants used a variety digital media tools within OLEs. They used email, phone calls and video chat services for communications with students. Heather discussed that her department was receiving complaints difficulties with SWDs accessing video controls, so they hired trainers to teach faculty how to create accessible videos within their LMS. Faculty at one of Noval's universities were encouraged to use multimedia, but they are informed that it must be compliant with accessibility guidelines. When creating her lectures, Heather stated that she uses a teleprompter to help her read her pre-scripted notes.

Regarding document accessibility, some of the common formats used by participants were PDF, Microsoft PowerPoint and Microsoft Word. There were some contrasting opinions about the accessibility of PDF files. Noval was not allowed to use PDF files at one of her universities and Joan stated that Microsoft Word documents are

preferable to PDFs when it comes to accessibility. Heather explained how faculty can be taught to create accessible PDF documents. However, it is much more complicated to create a fully accessible PDF compared to a Microsoft Word document. While it is possible to create accessible PowerPoint files, faculty need to learn how to do so. Heather stated that she helps other faculty create accessible materials as needed due to the time requirements for them to learn how to do so on their own. Noval mentioned using Prezi to create presentation, and she did not express an awareness that this software is not accessible for SWDs who use screen reading technology. In 2014, on Prezi's online community forum, they reported that they do not have a VPAT (https://getsatisfaction.com/prezi/topics/could-you-please-direct-me-to-or-supply-me-with-a-copy-of-the-voluntary-product-accessibility-template-vpat-for). There are numerous resources available for tutorials and instruction for creating accessible documents, but faculty need to be aware of these materials and may need more hands-on training.

Heather and Joan stated that asynchronous discussion boards were accessible and usable for all students, including those with disabilities. Gieuseppi had a very different experience with one of his students with a visual impairment who had difficulty accessing the discussion board to read and reply to other student's posts. Heather was concerned that the discussion forum was not engaging for students. Catherine stated that no students requested using the synchronous chat features available within the LMS, but Heather used synchronous tools to have a real-time meeting with students at least once per course. She stated that there were accessibility issues for SWDs and they didn't have the same experience as other students who could access all of the features. This is

consistent with Burgstahler's (2006) findings that synchronous forums create barriers for students both with and without disabilities.

Strengths, Weaknesses and Limitations

Two strengths of this study were the sample size and diversity of participants. Smith et al. (2009) stated that for IPA studies, a sample size between three to six participants would allow researchers to discern meaningful similarities and differences between participants' experiences. Therefore, the sample size of seven for this study was more than sufficient. Although it was not intended as part of the original design for the study, there was almost an even split between two categories of faculty. There were three participants who worked within fields that had an emphasis on accessibility, AT, and working with PWDs; compared to the four faculty from other content areas. This allowed for comparisons and contrasts between these two populations of faculty. Participants had a range of diversity for their geographic location, experience with PWDs, content areas, experience teaching in higher education, experience teaching in OLEs, and tenure status (Appendix L and Appendix M).

Another strength of this study was the application of IPA as an approach to explore the lived experiences of faculty in regards to their experiences with accessibility and working with SWDs in OLEs. This researcher has not found other literature on this topic that has followed this research approach. Drawing conclusions and recommendations from a review of literature from 2006 through to the present, Seale (2014) reported that there has been very little research to explore the perceptions and experiences of key stakeholders in OLEs, such as faculty, and that there is a need for research to help break the silences from these key stakeholders (p. 171). As Creswell

(2007) stated, qualitative research is time intensive and requires exhaustive analysis. This was certainly the case for this IPA study, which involved detailed analysis and coding for all individual transcripts prior to making generalizations, as recommended by Smith et al. (2009). The process of the semi-structured interviews allowed for participants to share their own experiences with minimal prompting from the researcher.

A weakness of this study is that only this researcher conducted analysis of the transcripts. Therefore, inter-rater reliability and comparisons were unavailable, which would provide alternate perspectives into the lived experiences of online faculty regarding their accessibility awareness, implementation, and experiences working with SWDs. Smith et al. (2009) stated that there are differences between analysis conducted by a single researcher compared to two or more researchers, they explained that methods could be taken to ensure transparency throughout the research process. Methods were applied throughout the research process to ensure transparency, including an ongoing research journal to bracket bias.

All efforts were made to bracket bias and to avoid the exhibition of opinions during interviews. However, this researcher acknowledges that this was somewhat more difficult to do particularly with faculty who worked within the field of accessibility, AT, or with PWDs, since they had an understanding of the researcher's background. Because of this, they often asked for feedback or acknowledgement during our interviews. While relating to participants to help them feel at ease during interviews, the researcher was very careful not to influence their opinions or to direct the flow of conversation.

A limitation of this study is that all participants had to make the choice to participate in this study. This self-selection process may have narrowed the study to

faculty who had some interest or investment in accessibility for SWDs. However, unless a similar study is conducted at a single institution, it would be difficult to mandate participation among this population.

Quality Control

Yardley (as cited in Smith et al., 2009) discussed four principles for quality control within qualitative research and Smith et al. (2009) discussed how these should be applied to IPA studies. These principles include: sensitivity to context, commitment and rigor, transparency and coherence, as well as impact and importance (as cited by Smith et al.). Sensitivity to context was demonstrated through an establishment of rapport with participants, empathy, and careful analysis of the data. Due to the nature of IPA, Smith et al. (2009) stated that this method will always have verbatim transcripts, "demonstrating sensitivity to the raw material" (p. 180). Rigor was demonstrated by the thoroughness of the interview design, process and analysis. The research journal was used to identify and bracket values, feelings and ideas related to the study, as well as to provide an ongoing process for transparency (Ortlipp, 2008).

The details for each step of the study in the results section were another means for ensuring transparency, while careful attention to maintain consistency with the IPA approach was a means of coherence. The concepts of impact and importance was assessed by how interesting and useful the study will be to potential readers (Smith et al., 2009). An additional strategy recommended by Glensne and Peshkin (1992) is for the researcher to be "non-reactive in order to increase the reliability of the interviewee's responses, that is, that the same answers would be given if the questions were asked at

another time, in another place, even by another interviewer" (as cited by Ortlipp, 2008, p. 697).

Implications

This is the first known study that has used a phenomenological approach to explore the experiences of online faculty related to their work with SWDs, as well as how they implement accessibility and accommodations in OLEs. The semi-structured interviews allowed for the collection of data that provided an in-depth view into the experiences of participants. As Smith and Osborn (2008) stated, IPA allowed for a detailed analysis of transcripts to determine the essence of experience of faculty participants, as well as how the participants made sense of their experiences using a double hermeneutic approach (Smith et al., 2009). There are several implications that can be deduced from the findings of this interpretative phenomenological analysis of faculty accessibility awareness and implementation. These include recommendations for practice among faculty and other staff within OLEs, as well as recommendations for future research.

Recommendations

Training is needed for accessibility awareness, sensitivity training, as well as for teaching faculty and students how to access support services. Faculty also require training and resources to learn how to create accessible content within their OLEs, including HTML content and accessible documents. Since experience with PWDs seems to be related to higher levels of awareness, this should include workshops that allow faculty to listen to experiences from SWDs. Simulations, document creation and LMS skills for creating content would also be helpful. Faculty need supports to assist with initial course

design, as well as accommodations for SWDs. Furthermore, they need training and preferably a hands on tour of available services for SWDs, so they know how to proceed when a student needs services and who to contact. Incentives should be offered for following principles for usability, as well as UDL. Training in this area should be mandatory for all faculty, because if it is optional, many are likely not to attend. Incentives should be considered as they would encourage faculty and other pertinent staff to attend such trainings.

Faculty should include information on school policies for SWDs, as well as information for obtaining services through ODS or related departments in the syllabi or within the OLE. To help students feel more at ease to disclose information about disabilities, a statement or welcome message can be included to encourage students to know that they should contact the faculty member if they need assistance or to let them know what works best for them within online courses. Prior to implementing new software, including LMSs, accessibility should be assessed to ensure that these tools will be usable and accessible for the broadest population of students and should include reviews of VPATs (Betts, Welsh, et al., 2013).

Support services are necessary for faculty, staff, and students to assist with implementing accessibility, as well as accommodations when needed. This can include document accessibility, alternative media creation, captions for audio and video, and assistance with usable and accessible design within OLEs. Faculty autonomy, which was highly valued among most participants, needs to be balanced with accessibility (Ferguson, 2005) to determine the best way to implement online courses that are usable and accessible to the widest population of students. Administration, faculty, and staff will

need to consider whether to have prescripted or standardized courses compared to offering faculty autonomy and creative freedom. Perhaps a compromise can be found between these different strategies. Live synchronous chats were discussed as being problematic and not completely accessible for SWDs, which is consistent with Burgstahler's (2006) findings, so this is an area where faculty, staff and administration will need to deliberate to find ways to either improve accessibility or consider alternative methods of communicating within asynchronous discussion forums. It is also important to offer services and adequate training to SWDs, so that they are familiar with accessibility policies, as well as how to navigate within the LMS. If they require AT software, training should be provided as needed to ensure that they are familiar with this software and using it to access all online course materials.

Recommendations for Future Research

This study focused on faculty experiences with accessibility, training, policies, and SWDs as they were self-reported by participants. Further study is recommended in the future to determine how accessibility awareness, training and experiences among faculty relate to the actual accessibility of their OLEs. This research would allow for a gauge to help determine the accuracy of faculty perceptions of the accessibility and usability of their online courses. Furthermore, it would be helpful to compare and contrast the perspectives and experiences of SWDs, administration, and support staff with those of faculty to ascertain the roles and responsibilities of these key stakeholders. Seale (2014) stated that "…e-learning professionals are not playing a key role in supporting the development of accessible e-learning across university campuses" (p. 84), and she also stated that researchers often overlook administration when conducting research on the

accessibility of online courses. While this study focused on faculty experiences, it would be helpful to look more closely at a variety of key stakeholders and relationships in regards to accessibility to determine how to best support faculty and SWDs in OLEs. IPA would be a useful approach for future studies since Seale (2014) stated that "…little is drawn directly from personal narratives and experiences of the stakeholders themselves" (p. 28).

Future studies are also recommended to assess the accessibility of different LMSs and educational tools. Furthermore, more information is needed to determine what percentage of faculty have disabilities and what types of accommodations they need to perform their job responsibilities. Another area for a potential study for future research is to determine what types of training students have obtained prior to enrolling in online courses and areas where they need further training. SWDs need to be made aware of services available to them when they are taking online classes, such as ODS, so that they are aware of how to apply for services when needed. Research is also needed to determine how to best encourage students to disclose their disability in OLEs, as well as how to best inform them about services.

Summary

This interpretative phenomenological analysis (IPA) (Smith et al., 2009) of the accessibility awareness and experiences of online faculty was an extension of the work of Ortiz et al. (2009), who used a different research methodology to study the accessibility awareness and practices of online faculty. The review of literature explored the history of accessibility and accessibility awareness within OLEs, faculty accessibility awareness in OLEs, components of accessibility that faculty need to understand, accessibility

simulations for the Web and learning management systems (LMSs), universal design for learning (UDL), accessibility indicators, research needed for accessibility awareness, and IPA as a research approach. The goal of this current study was to describe the lived experiences of faculty in online learning environments (OLEs) regarding their encounters with accessibility for students who have print related disabilities to understand the issues regarding accessibility awareness and implementation. The following three research questions guided this study:

RQ1. How do faculty in OLEs experience encounters regarding accessibility for students who have print related disabilities?

RQ2. How do faculty in OLEs experience the journey of developing the skills needed to provide accessibility for students with print related disabilities?

RQ3. What aspects of accessibility and UDL do faculty members practice in OLEs and what meaning do they ascribe to the lived experience of providing these accommodations?

There were numerous steps in the research study as approved by the NSU IRB. A reflexive journal was used throughout the research study as recommended by Roulston (2010), who suggested that a reflexive journal is a tool for the researcher to consider "…reflections, ideas, commentaries, and memos throughout the research process" (p. 121). A journal was used throughout the development of the idea paper and proposal and this same journal was used throughout the remainder of this study. Recruitment was conducted via the Online Faculty Accessibility Awareness Screening Questionnaire (OFAASQ) pre-screening survey (Appendix B). This survey was conducted using Survey Monkey. Participants were invited to participate from contacts made through the

Assistive Technology Industry Association (http://www.atia.org), Accessing Higher Ground (http://www.accessinghigherground.org) and the Sloan Consortium, now the Online Learning Consortium (http://olc.onlinelearningconsortium.org). The pre-screening survey was expected to take less than fifteen minutes for each participant.

Two participants were selected for a pilot study and the Online Faculty Accessibility Awareness Interview Guide (OFAAI) (Appendix C) was used for semi-structured interviews with these two participants. Prior to each interview, a consent form (Appendix F) was sent to each participant. Once the signed consent forms were returned, copies were provided and the interviews were scheduled. The range of the initial interviews for pilot participants was one hour, twelve minutes and fifteen seconds to one hour, thirty-six minutes and thirteen seconds. Notes were taken during interviews and each interview was audio recorded. No video was used during the interview or in the recordings. Both of the pilot interviews were transcribed using a professional transcription service. However, there was still a need for interpretation by the researcher, according to Smith and Osborn (2008), so during the first reading of the interviews, the researcher listened to the audio recordings simultaneously.

After reading through the interviews once, the transcriptions were reviewed with each respective participant to confirm accuracy as a means for triangulation. The interview transcripts were sent to the two pilot participants to review and confirm accuracy. A follow-up interview was conducted to discuss any additional areas that may need further discussion, as well as to determine if any additions or changes are needed to the original transcript. The pilot interviews allowed for the researcher to assess bias issues, request feedback for vague questions, determine the time needed for the interview

and adjust accordingly, and refine the interview guide (Chenail, 2009). The review of the transcript and the follow-up interview was expected to last approximately one to two hours. The range for the pilot follow-up interviews was twenty-six minutes and forty-eight seconds to forty minutes and twenty-four seconds.

Preliminary analysis was conducted using NVivo to analyze the transcripts for codes and themes for the interview transcripts with the two pilot participants. The transcripts were reviewed numerous times. No revisions were deemed appropriate for the interview guide following the pilot study. Six participants were selected for the study using the same pre-screening survey used for the pilot study. The Online Faculty Accessibility Awareness Screening Questionnaire (OFAASQ) pre-screening survey (Appendix B) was conducted using SurveyMonkey.com (http://www.surveymonkey.com). Participants were invited to participate from contacts made through the Assistive Technology Industry Association (http://www.atia.org), Accessing Higher Ground (http://www.accessinghigherground.org) and the Sloan Consortium, now the Online Learning Consortium (http://olc.onlinelearningconsortium.org). The pre-screening survey was expected to take less than fifteen minutes for each participant.

The same Online Faculty Accessibility Awareness Interview Guide (OFAAI) (Appendix C) was used for semi-structured interviews with these participants. Prior to each interview, a consent form (Appendix F) was sent to each participant. Once the signed consent forms were returned, copies were provided and the interviews were scheduled. The average interview length for all initial interviews was one hour, ten

minutes and thirty-six seconds. Notes were taken during interviews and each interview was audio recorded. No video was used during the interview or in the recordings.

The audio recordings from the interviews were transcribed using a professional transcription service. As with the transcripts from the pilot interviews, the researcher listened to the recordings during the first reading of the interviews. After reading through the interviews once, the transcriptions were reviewed with each respective participant to confirm accuracy as a means for triangulation. The interview transcripts were sent to each of the participants to review and confirm accuracy. A follow-up interview was conducted with each participant to discuss any additional areas that needed further discussion, as well as to determine if any additions or changes were needed to the original transcript. The average length of the follow-up interviews was twenty-eight minutes and fifty-two seconds. Analysis was conducted using NVivo to analyze the transcripts for codes and themes for the interview transcripts. Once all transcripts were analyzed in this manner, Smith and Osborn (2008) recommended that the next step is to list "emergent themes" and search for connections between these themes. Themes were compiled with information leading the researcher back to the original location of each instance of the themes represented within the transcripts (Smith & Osborn). The researcher then compiled the analysis into the results section, which provided a "narrative account" discussing the themes associated with accessibility awareness among participants.

The results of this study led to eight super-ordinate themes regarding faculty experiences and perspectives of accessibility implementation and working with students with disabilities (SWDs). There were a total of 44 sub-ordinate themes. These were used to answer the research questions. The first four super-ordinate themes were related to

research question one, while the fifth theme was related to research question two, and the final three super-ordinate themes were related to research question three. The super-ordinate themes were as follows:

1. Accessibility and usability awareness of online faculty: Faculty expressed concerns regarding an awareness gap for themselves or other online faculty. Experiences with people with disabilities (PWDs) and SWDs was important for faculty to help them understand accessibility concerns and needs within OLEs. Attitudinal change is vital to ensuring that staff and faculty in OLEs are proactive in addressing the needs of all students, which Seale (2014) stated is critical to improving accessibility implementation. The majority of participants were unaware of accessibility policies and laws, and those who were aware expressed concerns about how well online courses were monitored for accessibility compliance.
2. Interactions and relationships between faculty, students, various departments, and outside organizations relating to SWDs and accessibility: Faculty discussed a range of experiences with different staff regarding accessibility implementation and accommodations for SWDs. Support services are vital for faculty in order to assist them with implementing accessibility. Faculty collaborate with instructional designers, administrators, office for disability services (ODS), SWDs and other staff to provide accessible and usable online courses. However, some faculty have less interaction than others and would likely benefit from additional support services. Faculty also discussed the

importance of peer support between SWDs and other students, as well as how they learn about SWDs in OLEs.

3. Different perspectives and experiences of faculty who teach courses within programs that have an emphasis on accessibility, AT, or working with PWDs: There were some differences between the experiences of faculty who work within fields relating to PWDs, which included concern for accessibility in other content areas, stronger connection to ODS and similar services, expectations that courses within these programs will be more accessible, as well as beliefs that accessibility is improving online. They also had apprehensions about inaccessible educational tools or software that may be accessible, but difficult to use for SWDs.
4. Faculty experiences and perspectives of working with SWDs and providing accessible materials in OLEs: Faculty discussed the importance of having a culture of inclusion that trickles from administration to faculty to students. They discussed their experiences with students with various types of disabilities, frustrations with the process of accessibility implementation, demanding responsibilities which make the thought of accessibility implementation overwhelming, technology concerns and perspectives, and misconceptions about accessibility and SWDs. Participants also shared their belief that student orientation would be a good time to inform students about disability services and to foster inclusion. They discussed what would help faculty be better prepared to work with SWDs and where they felt that they needed to improve in this area.

5. Faculty training and experience with accessibility and people with disabilities: Participants discussed challenges towards providing accessibility training for faculty who teach online, faculty need versus desire for training in accessibility and online teaching in general, prior training and experience with accessibility or working with PWDs, and workshops offered to faculty on the topic of accessibility or working with SWDs.
6. Faculty autonomy within OLEs as it relates to creating accessible content: Participants had differing experiences regarding their autonomy within OLEs. Several faculty stated that they preferred having creative freedom and autonomy over having prescripted courses. However, they also discussed the pros and cons of having more standardized courses.
7. Accommodations and accessibility features used in OLEs: Faculty discussed accommodations or features that help students with and without disabilities, how faculty work with students to offer help and inform them about accessibility services, HTML elements that can be made to be accessible, more time as an accommodation, retrofitting accessibility is not the best practice, and it is time intensive to implement accessibility.
8. LMS accessibility and usability: Participants shared experiences about the various course components implemented in LMSs, digital media used in online courses and their perceptions about the accessibility and usability of these tools, LMS platforms used in OLEs and helpdesk resources, synchronous versus asynchronous usability and accessibility concerns, and overall usability of navigating and accessing materials in OLEs for SWDs.

In conclusion, the results of this study have addressed the following three research questions:

How do faculty in OLEs experience encounters regarding accessibility for students who have print related disabilities? Faculty identified an awareness gap amongst themselves and other faculty teaching in OLEs. They expressed frustrations due to not having adequate experiences and knowledge to address accessibility concerns for SWDs and stated that this may affect the experiences of SWDs in OLEs. Experience with PWDs seemed to be related to higher levels of knowledge and awareness of accessibility issues within OLEs. Participants also expressed concerns about their limited knowledge of policies, guidelines, and laws pertaining to accessibility implementation in online courses. There appears to be more awareness of higher incidence disabilities, such as learning disabilities, compared to lower incidence disabilities, such as blindness. Concerns were expressed about the stigma of labels and naming for ODS and related departments, issues preventing SWDs from disclosing that they have a disability and seeking out needed services, as well as collaboration between ODS, administration and other departments to implement accessibility.

There were some differences between faculty who teach within fields that have an emphasis on PWDs compared to other content areas, which included concerns for accessibility in other content areas, stronger connections with ODS and related services, beliefs that accessibility awareness and implementation is improving, as well as issues with many educational tools being inaccessible of difficult to use for SWDs. Faculty discussed their perspectives of student's perspectives of OLEs, as well as misconceptions

of accessibility and SWDs. Some participants expressed an understanding of the type of assistive technology (AT) used by SWDs, while other participants were not familiar with these technologies. They shared what they believed were challenges and advantages for SWDs in online courses. Due to demanding responsibilities, faculty, may feel that accessibility implementation or accommodations is "just one more thing to add on," as stated by Sloan during her interview.

How do faculty in OLEs experience the journey of developing the skills needed to provide accessibility for students with print related disabilities? Faculty discussed experiences with former training and experience with PWDs. Overall, there appears to be a desire and a need for training to improve faculty awareness and knowledge of how to implement accessibility principles within online courses. If training is optional, the participants expressed that they did not believe that most faculty would be inclined to attend. Therefore, incentives will be important for future accessibility trainings.

What aspects of accessibility and UDL do faculty members practice in OLEs and what meaning do they ascribe to the lived experience of providing these accommodations? Some faculty had full autonomy over their courses, while others worked within pre-scripted or standardized courses in which they had limited or no editing rights. More than half of the participants expressed that organization was very important within LMSs to ensure that all students were able to navigate within courses. Participants shared experiences with implementing personalized learning strategies, captioning, transcriptions and other accessible features. Only two participants mentioned audio description and due to the time and technical skill involved, they stated that they rarely if ever implemented this within the videos listed within their courses. Time

constraints and the need for early planning was stressed by many faculty and they stated that it was often difficult to plan far enough ahead of time to implement all needed accessibility features. Therefore, retrofitting was often used for components within the LMS. According to Poore-Pariseau (2010), retrofitting can take more time than implementing accessibility or UDL during the planning stages of OLEs. Participants had experiences with a variety of LMSs, but Blackboard was the most common LMS used. Some participants need training and assistance in order to create accessible course content for PDFs, Microsoft PowerPoint and Word files, as well as other documents and materials used within OLEs. Some faculty stated that SWDs had issues with asynchronous discussion forums, while other participants stated that these formats were very accessible and usable. There were also issues referenced for inaccessible components for synchronous chat features.

The results of this study led to several implications, including recommendations and recommendations for future studies. Training is needed for faculty, students and likely other staff and administration within online programs for laws, guidelines, policies, related services, as well as best practices for implementing accessibility and accommodations. There should be relevant and appropriate incentives to encourage faculty and other staff to attend these trainings. Support services are also necessary for faculty, staff and students while they are learning to implement accessibility, as well as for ongoing support services to assist with more complicated tasks of creating alternative media and adding accessible features within the LMSs. Future studies are recommended to continue the work of this current study, including research comparing the lived experiences of faculty to students, administration, ODS and other key staff in regards to

accessibility and accommodations in OLEs. It would also be beneficial to conduct research to compare and contrast faculty experiences and perspectives with tangible evidence of accessibility practices implemented within their OLEs. Several other areas for potential research were also identified and IPA would likely be a useful research approach for future studies.

Appendix A

List of Features of Four Historical Survey Studies on Accessibility Awareness

Study Title and Author	*Keys to access: Accessibility conformance in VET* (Lamshed, Berry, & Armstrong, 2003)	*Designing accessible Web-based Instruction for all learners* (Roh & So, 2005)	*Web accessibility for students with disabilities who use assistive technology: A moving target for postsecondary institutions* (Ferguson, 2005)	*A survey on the accessibility awareness of people involved in Web development projects Brazil* (Freire, Russo, Fortes, 2008)
Location	Australia	Mid-western state, United States of America	Oklahoma, United States of America	Brazil (all 27 states)
Type of Study	Survey research combined with website accessibility testing	Semi-structured individual interviews	Instrumental case study, qualitative research	Survey research, qualitative research
Target Population	Educators including Web Administrators, Online Learning Managers, etc. from the TAFE (Technical and Further Education) institutes in Australia, as well as participants from independent providers whose websites passed accessibility testing procedures.	Educators, administrators and students involved in OLEs.	Staff from 4 Colleges including: ADA and Disabilities Directors, Computer Specialists, Manager of OLE, Web Developers, Deans, Instructional Designers, a Grant Administrator and an Assistant Director	Web Developers

Appendix A Continued.

Study Title and Author	*Keys to access: Accessibility conformance in VET* (Lamshed, Berry, & Armstrong, 2003)	*Designing accessible Web-based Instruction for all learners* (Roh & So, 2005)	*Web accessibility for students with disabilities who use assistive technology: A moving target for postsecondary institutions* (Ferguson, 2005)	*A survey on the accessibility awareness of people involved in Web development projects in Brazil* (Freire, Russo, & Fortes, 2008)
Number of Participants	65 staff from 54 TAFE institutes and 10 people from independent providers participated in the phone interview. More than 30 face-to-face consultations.	2 Online Educators, 2 Administrators and 4 students with disabilities.	23 - 19 Interviews conducted, two of these included two staff members from the college, while the others only included one staff member, as well as 2 pilot interviews.	Survey does not state the exact number of participants, but there were 630 answers, 613 of which were considered valid. If there were 17 questions per survey, and each person completed the entire survey, then there were at least 37 participants.
Questionnaire Method	Phone interviews and face-to-face consultations	Oral interviews (except for two email interviews were conducted. Both researchers interviewed participants together at the same time.	Formal Interviews	Web-based questionnaire

Appendix A Continued.

Study Title and Author	*Keys to access: Accessibility conformance in VET* (Lamshed, Berry, & Armstrong, 2003)	*Designing accessible Web-based Instruction for all learners* (Roh & So, 2005)	*Web accessibility for students with disabilities who use assistive technology: A moving target for postsecondary institutions* (Ferguson, 2005)	*A survey on the accessibility awareness of people involved in Web development projects in Brazil* (Freire, Russo, & Fortes, 2008)
Sampling Method	Staff from 54 of the 65 TAFE institutes, plus 10 from independent providers whose websites passed accessibility testing procedures.	Faculty, administration and students were chosen from one single university.	Chose 4 schools in a given state, sample of convenience	Non-probabilistic
Number of Questions	10	Not specifically discussed; however, interview lengths were from 45 minutes to 6 hours.	19 – Five questions are listed on the interview protocol; however, there are follow-up questions to most of these.	17

Apendix A Continued.

Study Title and Author	*Keys to access: Accessibility conformance in VET* (Lamshed, Berry, & Armstrong, 2003)	*Designing accessible Web-based Instruction for all learners* (Roh & So, 2005)	*Web accessibility for students with disabilities who use assistive technology: A moving target for postsecondary institutions* (Ferguson, 2005)	*A survey on the accessibility awareness of people involved in Web development projects in Brazil* (Freire, Russo, & Fortes, 2008)
Type of Questions	4 Likert, 1 multiple choice, 3 open-ended, 2 closed-ended The questionnaire also requested the name of the organization and the position within that organization.	Semi-structured interview. Questions were not listed in the study report.	Open-ended, one closed-ended	6 related to demographics, 9 closed-ended, 2 open-ended. There is a general section and then a follow-up set of questions asking why developers do or do not consider accessibility.
Reliability methods	Not discussed in report.	Both researchers interviewed participants together and transcriptions of interviews were sent to participants for "member checks" (p. 3).	Discussed on pages 85-86. All interviews were transcribed and memos were used to track decisions throughout the study.	Not discussed in report.
Other study components	Web site testing.			

Appendix B

Online Faculty Accessibility Awareness Screening Questionnaire (OFAASQ): Invitation to Participate and Consent Information for Pre-Screening Survey Participants in the Research Study Entitled Interpretative Phenomenological Analysis of Accessibility Awareness Among Faculty in Online Learning Environments

This initial screening questionnaire was developed from the original demographic questions in the survey developed by Ortiz et al. (2009), which was not published. The original survey was retrieved from T. Ortiz (personal communication, October, 26, 2010). The original email correspondence is provided in Appendix J. Additional items have been added and some items have been revised for the purpose of this research. The survey was created using SurveyMonkey (http://www.surveymonkey.com).

1. Information and Consent Page for the Online Faculty Accessibility Awareness...

Information and Consent Page for the Online Faculty Accessibility Awareness Screening Questionnaire (OFAASQ)

Consent Information for Participation in the Research Study Entitled Interpretative Phenomenological Analysis of Accessibility Awareness Among Faculty in Online Learning Environments

Funding Source: None
IRB protocol #: 08211317Exp.

Principal investigator(s):
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954-262-2073

Dear Colleague,

Thank you for participating in this study, which is being conducted by Rachael Trinkowsky, who is a doctoral candidate at Nova Southeastern University. We are seeking participants who are currently teaching at least one course that is online at least 80% of the time, who have had experience with at least one student with a print related disability in an online course. For the purposes of this study, print related disabilities include: visual impairments, learning disabilities, hearing impairments and upper body motor impairments.

The purpose of this study is to interview faculty in higher educational institutions to describe how online faculty gain knowledge regarding accessibility, to explore the lived experiences of online faculty who have worked with students who disabilities, and to gain a better understanding of how faculty experience the process of accessibility implementation.

This pre-screening survey involves the completion of an online questionnaire. Participation in this study is entirely voluntary and should take approximately 15 minutes of your time. Two participants will be selected to participate in a pilot study and another six participants will be selected to participate in the primary study.

The next step of this study will be a telephone interview for the 2 pilot study participants and then the six primary study participants. The interviews will be audio-recorded. Each interview will last approximately one to two hours. You will be asked about your experiences of working with students with print related disabilities in online learning environments. A follow-up interview will be conducted to confirm the accuracy of the transcript and this should take approximately 30 minutes to one hour.

The procedures or activities in this study have the potential risks of loss of time and the possibility of disclosure of non-compliance information or other confidential data. The likelihood of both of these risks are considered to be minimal. Loss of time is considered a minimal risk for participation in this study. The time involved for each participant in the study will be approximately three hours and fifteen minutes or less. This will include the pre-screening survey, the individual interview, and the follow-up interview. All measures will be taken to adhere to the time limitations to respect the needs of the participants. It may be likely that less time will be needed for each component of the study.

Participants may disclose information regarding non-compliance with accessibility regulations by themselves or within their respective schools. This is a medium level risk and the duration could vary. If non-disclosure information were disclosed, the risk could be long term. To protect the confidentiality of participants, the researcher will use pseudonyms for participants in both interviews and comments. Additionally, all data will be secured with password protection known only to the researcher. The consent forms with the full names of participants will be kept in a locked filing cabinet available only to the researcher. A secure computer with password protection only known to the researcher will be used, as well as a backup hard drive with comparable security protection.

After a three year period following the completion of the study, all data will be destroyed in a timely manner according to IRB guidelines. Data destruction will include a full wipe of the hard drives used to store study related data and recorded interviews. Only pseudonyms and non-identifying data will be used in the final report. All information obtained in this study is strictly confidential unless disclosure is required by law. Also, the Institutional Review Board at Nova Southeastern University and Dr. Laurie Dringus may review research records.

If you have any questions about the research, your research rights, or have a research-related injury, please contact Rachael Trinkowsky and Dr. Laurie Dringus. You may also contact the IRB toll free at 866-499-0790 or via email at IRB@nsu.nova.edu.

There are no direct benefits for participation in this study. There are no costs to you or payments made for participating in this study. You have the right to leave this study at any time or refuse to participate. If you do decide to leave or you decide not to participate, you will not experience any penalty or loss of services you have a right to receive. If you choose to withdraw, any information collected about you before the date you leave the study will be kept in the research records for 36 months from the conclusion of the study but you may request that it not be used.

If you are selected to participate in the next phase of this study, which will involve a telephone interview, and you choose to participate, you will first need to consent to participation.

◯ I understand that completion of this survey implies my consent to participate in the study.

2. Eligibility to Participate in the Study

Eligibility to Participate in the Study

To be eligible to participate in this study, you must currently be teaching at least one higher education course that is online at least 80% of the time in the United States of America.

◯ I am currently teaching at least one higher education course that is online at least 80% of the time in the United States of America.

Have you worked with at least one student online who has a print related disability? This can include a visual impairment, upper body motor impairment, hearing impairment or learning disability.

◯ I have worked with at least one student online with a print related disability. This includes visual impairments, upper body motor impairments, hearing impairments, or learning disabilities.

3. Demographic Information

Thank you for agreeing to participate in this study. For confidentiality and privacy purposes, we will use a pseudonym rather than your real name. Please enter a pseudonym that you would prefer to be called, your e-mail address and phone number.

Please select a pseudonym that you would like to be called during interviews::

Email Address:

Phone Number:

Are you male or female?

- ◯ Male
- ◯ Female

4. Experience Teaching Online

Please identify your role at the primary College or University where you teach online.

- ◯ Tenured faculty
- ◯ Non-tenured faculty
- ◯ Teacher assistant

Other (please specify)

How many years have you been teaching in higher education?

- ◯ 0 to 5
- ◯ 6 to 10
- ◯ 11 to 15
- ◯ 16 to 20
- ◯ 21 to 25
- ◯ 26 to 30
- ◯ 31 to 35
- ◯ 36 or more

Please identify the department(s) in which you teach online.

How many years have you been teaching online or distance education courses?

- ◯ less than 1 year
- ◯ 1 to 3 years
- ◯ 4 to 9 years
- ◯ 10 to 15 years
- ◯ 15 or more years

Which state/province is the primary college or university where you teach online?

State:

What online or distance education courses are you currently teaching?

5. Experience with People with Print Related Disabilities

I have worked with students in online courses who have the following disabilities: (Please type the number of students that you have worked with in online courses for each of the following categories).

How many students with visual impairments have you worked with in online courses?

How many students with upper body motor impairments have you worked with in online courses?

How many students with hearing impairments have you worked with in online courses?

How many students with learning disabilities have you worked with in online courses?

I have had the following experiences with people with disabilities: (Please select all that apply)

- [ ] I have a disability
- [ ] I have one or more family members who have a disability
- [ ] I have one or more friends and/or acquaintances who have a disability
- [ ] I have taught one or more students who have a disability
- [ ] I have worked with one or more colleagues who have a disability

6. Thank you for your participation!

Thank you for participating in this pre-screening survey. If you are selected to participate in the next phase of the study, which is the interview, you will be contacted shortly.

Appendix C

Interview Guide

RQ1. How do faculty in OLEs experience encounters regarding accessibility for students who have print related disabilities?

RQ2. How do faculty in OLEs experience the journey of developing the skills needed to provide accessibility for students with print related disabilities?

RQ3. What aspects of accessibility and UDL do faculty members practice in OLEs and what meaning do they ascribe to the lived experience of providing these accommodations?

Table 1. Interview Guide Questions and the Research Questions that they will Address.

Interview Guide Question	Research Question Addressed
1. What can you tell me about your experiences of working with students with print related disabilities in online learning environments? (Grand tour question)	RQ1
2. What steps were needed to provide accommodations and accessibility in the online course(s)?	RQ1
3. What do you think the student(s) with disabilities thought about the accessibility of the online course(s)?	RQ1
4. How did the experiences of working with student(s) with disabilities compare to working with other students in online courses?	RQ1
5. Would you please describe any training or skill development that you have participated in that focused on accessibility practices or working with students with disabilities?	RQ2
6. Would you please describe the experience of implementing accessibility and accommodations in online courses?	RQ3

Appendix D

Approval Letter from the Institutional Review Board of Nova Southeastern University for Expedited Review of Interpretative Phenomenological Analysis of Accessibility Awareness Among Faculty in Online Learning Environments

NOVA SOUTHEASTERN UNIVERSITY

MEMORANDUM

To: Rachael Trinkowsky, CRC, Ed.S.
Graduate School of Computer and Information Sciences

From: David Thomas, M.D., J.D. DT for DT
Chair, Institutional Review Board

Date: October 15, 2013

Re: *Interpretative Phenomenological Analysis of Accessibility Awareness among Faculty in Online Learning Environments* – Research Protocol No. 08211317Exp.

I have reviewed the revisions to the above-referenced research protocol by an expedited procedure. On behalf of the Institutional Review Board of Nova Southeastern University, *Interpretative Phenomenological Analysis of Accessibility Awareness among Faculty in Online Learning Environments* is approved in keeping with expedited review categories #6 and #7. Your study is approved on **October 14, 2013** and is approved until **October 13, 2014.** You are required to submit for continuing review by **September 13, 2014**. As principal investigator, you must adhere to the following requirements:

1) CONSENT: You must use the stamped (dated consent forms) attached when consenting subjects. The consent forms must indicate the approval and its date. The forms must be administered in such a manner that they are clearly understood by the subjects. The subjects must be given a copy of the signed consent document, and a copy must be placed with the subjects' confidential chart/file.

2) ADVERSE EVENTS/UNANTICIPATED PROBLEMS: The principal investigator is required to notify the IRB chair of any adverse reactions that may develop as a result of this study. Approval may be withdrawn if the problem is serious.

3) AMENDMENTS: Any changes in the study (e.g., procedures, consent forms, investigators, etc.) must be approved by the IRB prior to implementation.

4) CONTINUING REVIEWS: A continuing review (progress report) must be submitted by the continuing review date noted above. Please see the IRB web site for continuing review information.

5) FINAL REPORT: You are required to notify the IRB Office within 30 days of the conclusion of the research that the study has ended via the IRB Closing Report form.

The NSU IRB is in compliance with the requirements for the protection of human subjects prescribed in Part 46 of Title 45 of the Code of Federal Regulations (45 CFR 46) revised June 18, 1991.

Cc: Dr. Ling Wang
Dr. Laurie Dringus
Ms. Jennifer Dillon

Institutional Review Board
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Appendix E

Participation Letter for the Research Study Entitled Interpretative Phenomenological Analysis of Accessibility Awareness Among Faculty in Online Learning Environments

NOVA SOUTHEASTERN UNIVERSITY
Graduate School of Computer and Information Sciences

NSU

NOVA SOUTHEASTERN UNIVERSITY
Institutional Review Board
Approval Date: OCT 14 2013
Continuing Review Date:
OCT 13 2014

Funding Source: None

IRB protocol #: 08211317Exp.

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Rachael Trinkowsky, CRC, Ed.S
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Davie, FL 33324
561-951-4957
trinkows@nova.edu

Co-investigator:
Dr. Laurie Dringus, Ph.D.
Professor, Graduate School of
Computer and Information Sciences
Nova Southeastern University
3301 College Avenue
Ft. Lauderdale, FL USA 33314
954-262-2073

Dear Colleague,

Please accept this invitation to participate in a research study about faculty awareness of accessibility in online learning environments in higher education. This study is being conducted by Rachael Trinkowsky, who is a doctoral candidate at Nova Southeastern University. We are seeking participants who are currently teaching at least one course that is online at least 80% of the time, who have had experience with at least one student with a print related disability in an online course. For the purposes of this study, print related disabilities include: visual impairments, learning disabilities, hearing impairments and upper body motor impairments. The purpose of this study is to interview faculty in higher educational institutions to describe how online faculty gain knowledge regarding accessibility, to explore the lived experiences of online faculty who have worked with students who have disabilities, and to gain a better understanding of how faculty experience the process of accessibility implementation.

There is a pre-screening survey that involves the completion of an online questionnaire. Participation in this study is entirely voluntary and should take approximately 15 minutes of your time. Two participants will be selected to participate in a pilot study and another six participants will be selected to participate in the primary study. The next step of this study will be a telephone interview for the 2 pilot study participants and then the six primary study participants. The interviews will be audio-recorded. Each interview will last approximately one to two hours. You will be asked about your experiences of working with students with print related disabilities in online learning environments. A follow-up interview will be conducted to confirm the accuracy of the transcript and this should take approximately 30 minutes to one hour.

3301 College Avenue • Fort Lauderdale, Florida 33314-7796 • (954) 262-2000 • 800-541-6682, ext. 2000
Fax: (954) 262-3915 • Web site: *www.scis.nova.edu*

The procedures or activities in this study have the potential risks of loss of time and the possibility of disclosure of non-compliance information or other confidential data. The likelihood of both of these risks are considered to be minimal. Loss of time is a considered a minimal risk for participation in this study. The time involved for each participant in the study will be approximately three hours and fifteen minutes or less. This will include approximately 15 minutes for the pre-screening survey, up to two hours for the individual interview, and up to one hour for the follow-up interview. All measures will be taken to adhere to the time limitations to respect the needs of the participants. It may be likely that less time will be needed and a time frame of one to two hours has been estimated for the initial interview, as well as an estimated time frame of 30 minutes to one hour for the follow-up interview.

Participants may disclose information regarding non-compliance with accessibility regulations by themselves or within their respective schools. This is a medium level risk and the duration could vary. If non-disclosure information were disclosed, the risk could be long term. To protect the confidentiality of participants, the researcher will use pseudonyms for participants in both interviews and comments. Additionally, all data will be secured with password protection known only to the researcher as recommended by Cooper et al. (2012). The consent forms with the full names of participants will be kept in a locked filing cabinet available only to the researcher.

A secure computer with password protection only known to the researcher will be used, as well as a backup hard drive with comparable security protection. After a three year period following the completion of the study, all data will be destroyed in a timely manner according to IRB guidelines. Data destruction will include a full wipe of the hard drives used to store study related data and recorded interviews. Only pseudonyms and non-identifying data will be used in the final report. All information obtained in this study is strictly confidential unless disclosure is required by law. Also, the Institutional Review Board at Nova Southeastern University and Dr. Laurie Dringus may review research records.

If you have any questions about the research, your research rights, or have a research-related injury, please contact Rachael Trinkowsky and Dr. Laurie Dringus. You may also contact the IRB toll free at 866-499-0790 or via email at IRB@nsu.nova.edu.

There are no direct benefits for participation in this study. There are no costs to you or payments made for participating in this study. You have the right to leave this study at any time or refuse to participate. If you do decide to leave or you decide not to participate, you will not experience any penalty or loss of services you have a right to receive. If you choose to withdraw, any information collected about you before the date you leave the study will be kept in the research records for 36 months from the conclusion of the study but you may request that it not be used.

If you are selected to participate in the next phase of this study, which will involve a telephone interview, and you choose to participate, you will first need to consent to participation. The consent form is attached to this e-mail for your review.

A link to the pre-screening survey is provided below:
[This will be added once the survey is created]

Thank you for your consideration,

Rachael Trinkowsky, CRC, Ed.S
Nova Southeastern University (Doctoral Candidate)

Appendix F

Consent Form for the Research Study Entitled Interpretative Phenomenological Analysis of Accessibility Awareness Among Faculty in Online Learning Environments

NOVA SOUTHEASTERN UNIVERSITY
Graduate School of Computer and Information Sciences

NSU

Consent Form for Participation in the Research Study Entitled
Interpretative Phenomenological Analysis of Accessibility Awareness
Among Faculty in Online Learning Environments

Funding Source: None

IRB protocol #: 08211317Exp.

Principal investigator(s)
Rachael Trinkowsky, CRC, Ed.S
19 Laredo Place
Davie, FL 33324
561-951-4957
trinkows@nova.edu

Co-investigator:
Dr. Laurie Dringus, Ph.D.
Professor, Graduate School of
Computer and Information Sciences
Nova Southeastern University
3301 College Avenue
Ft. Lauderdale, FL USA 33314
954-262-2073

For questions/concerns about your research rights, contact:
Human Research Oversight Board (Institutional Review Board or IRB)
Nova Southeastern University (954) 262-5369 or Toll Free: 866-499-0790
IRB@nsu.nova.edu.

Site Information: Principal investigator's home via teleconferencing
19 Laredo Place
Davie, FL 33324

What is the study about?
You are invited to participate in a research study about faculty awareness of accessibility in online learning environments in higher education. This study is being conducted by Rachael Trinkowsky (doctoral candidate). The purpose of this study is to interview faculty in higher educational institutions to describe how online faculty gain knowledge regarding accessibility, to explore the lived experiences of online faculty who have worked with students who have disabilities, and to gain a better understanding of how faculty experience the process of accessibility implementation.

Why are you asking me?
We are seeking participants who are currently teaching at least one course that is online at least 80% of the time, who have had experience with at least one student with a print related disability in an online course in higher education. For the purposes of this study, print related disabilities include: visual impairments, learning disabilities, hearing impairments and upper body motor impairments. There will be two participants for the initial pilot study and six additional participants for the primary study.

Initials: _____ **Date:** _____ **Page 1 of 3**

What will I be doing if I agree to be in the study?
The next step of this study will be a telephone interview. This interview will last approximately one to two hours. You will be asked about your experiences of working with students with print related disabilities in online learning environments. A follow-up interview will be conducted to confirm the accuracy of the transcript and this should take approximately 30 minutes to one hour.

Is there any audio or video recording?
This research project will include audio recording of the interviews. This audio recording will be available to be heard by the researcher, the IRB, the dissertation chair and committee, and a private professional transcription service. The recording will be transcribed by a private and professional transcription service. The recording will be kept securely on a password protected hard drive. The recording will be kept for 36 months after the completion of the study and destroyed after that time by software that will completely wipe the hard drive. Because your voice will be potentially identifiable by anyone who hears the recording, your confidentiality for things you say (or do) on the recording cannot be guaranteed although the researcher will try to limit access to the audio recording as described in this paragraph.

What are the dangers to me?
There is a risk of disclosure of non-compliance information or other confidential data. However, as indicated, all measures will be taken to ensure the confidentiality and privacy of data recorded from this study. If you have any questions about the research, your research rights, or have a research-related injury, please contact Rachael Trinkowsky and Dr. Laurie Dringus. You may also contact the IRB at the numbers indicated above with questions as to your research rights.

Loss of time is a considered a minimal risk for participation in this study and the likelihood of this risk is also minimal. The time involved for each participant in the study will be approximately three hours and fifteen minutes or less. This will include approximately 15 minutes for the pre-screening survey, up to two hours for the individual interview, and up to one hour for the follow-up interview. All measures will be taken to adhere to the time limitations to respect the needs of the participants. It may be likely that less time will be needed and a time frame of one to two hours has been estimated for the initial interview, as well as an estimated time frame of 30 minutes to one hour for the follow-up interview.

Are there any benefits for taking part in this research study?
There are no direct benefits.

Will I get paid for being in the study? Will it cost me anything?
There are no costs to you or payments made for participating in this study.

How will you keep my information private?
All information collected in this study will remain private and confidential. To protect the confidentiality of participants, the researcher will use pseudonyms for participants in both interviews and comments. Additionally, all data will be secured with password protection known only to the researcher. The consent forms with the full names of participants will be kept in a locked filing cabinet available only to the researcher. A

secure computer with password protection only known to the researcher will be used, as well as a backup hard drive with comparable security protection. Once the analysis is complete, all data will be destroyed in a timely manner according to IRB guidelines after a 36 month period. Data destruction will include a full wipe of the hard drives used to store study related data and recorded interviews. Only pseudonyms and non-identifying data will be used in the final report. All paper documents with identifiable subject information will be shredded and recycled three years following the conclusion of all parts of this study. All digital identifying data for this study will be stored on a hard drive specifically used for the purpose of this study and information will be backed up to one or more USB drives as needed. All backup drives with identifying information will be used solely for the purpose of this study. The memory of each of these drives will be wiped after the minimum of three years has passed using software, such as Eraser (http://eraser.heidi.ie/) or comparable software will be used to destroy all identifying data relating to this study. All information obtained in this study is strictly confidential unless disclosure is required by law. Also, the Institutional Review Board at Nova Southeastern University and Dr. Laurie Dringus may review research records.

What if I do not want to participate or I want to leave the study?
You have the right to leave this study at any time or refuse to participate. If you do decide to leave or you decide not to participate, you will not experience any penalty or loss of services you have a right to receive. If you choose to withdraw, any information collected about you **before** the date you leave the study will be kept in the research records for 36 months from the conclusion of the study but you may request that it not be used.

Other Considerations:
If significant new information relating to the study becomes available, which may relate to your willingness to continue to participate, this information will be provided to you by the investigators.

Voluntary Consent by Participant:
By signing below, you indicate that

- this study has been explained to you
- you have read this document or it has been read to you
- your questions about this research study have been answered
- you have been told that you may ask the researchers any study related questions in the future or contact them in the event of a research-related injury
- you have been told that you may ask Institutional Review Board (IRB) personnel questions about your study rights
- you are entitled to a copy of this form after you have read and signed it
- you voluntarily agree to participate in the study entitled "Interpretative Phenomenological Analysis of Accessibility Awareness Among Faculty in Online Learning Environments"

Participant's Signature: _____ Date: _____

Participant's Name: _____ Date: _____

Signature of Person Obtaining Consent: _____

Date: _____

Initials: _____ Date: _____

Appendix G

Continuing Review Approval by an Expedited Procedure Letter from the Institutional Review Board of Nova Southeastern University for Interpretative Phenomenological Analysis of Accessibility Awareness Among Faculty in Online Learning Environments

NOVA SOUTHEASTERN UNIVERSITY

MEMORANDUM

To: Rachael Trinkowsky, CRC, Ed.S.
Graduate School of Computer and Information Sciences

From: David Thomas, M.D., J.D. ~~PD~~ Ar OT.
Chair, Institutional Review Board

Date: September 5, 2014

Re: *Interpretative Phenomenological Analysis of Accessibility Awareness among Faculty in Online Learning Environments*—NSU IRB Protocol No. 08211317Exp.

I have reviewed the above-referenced research protocol in keeping with Continuing Review requirements by an expedited procedure. On behalf of the Institutional Review Board of Nova Southeastern University, *Interpretative Phenomenological Analysis of Accessibility Awareness among Faculty in Online Learning Environments* is approved. Your study is approved on **September 3, 2014** and is approved until **September 2, 2015.** You are required to submit for continuing review by **August 2, 2015.** As principal investigator, you must adhere to the following requirements:

1) CONSENT: You must use the stamped (dated consent forms) attached when consenting subjects. The consent forms must indicate the approval and its date. The forms must be administered in such a manner that they are clearly understood by the subjects. The subjects must be given a copy of the signed consent document, and a copy must be placed with the subjects' confidential chart/file.

2) ADVERSE EVENTS/UNANTICIPATED PROBLEMS: The principal investigator is required to notify the IRB chair of any adverse reactions that may develop as a result of this study. Approval may be withdrawn if the problem is serious.

3) AMENDMENTS: Any changes in the study (e.g., procedures, consent forms, investigators, etc.) must be approved by the IRB prior to implementation.

4) CONTINUING REVIEWS: A continuing review (progress report) must be submitted by the continuing review date noted above. Please see the IRB web site for continuing review information.

5) FINAL REPORT: You are required to notify the IRB Office within 30 days of the conclusion of the research that the study has ended via the IRB Closing Report form.

The NSU IRB is in compliance with the requirements for the protection of human subjects prescribed in Part 46 of Title 45 of the Code of Federal Regulations (45 CFR 46) revised June 18, 1991.

Cc: Dr. Ling Wang
Dr. Laurie Dringus
Mr. Randy Denis

Institutional Review Board
3301 College Avenue • Fort Lauderdale, Florida 33314-7796
(954) 262-5369 • Fax: (954) 262-3977 • Email: *irb@nsu.nova.edu* • Web site: *www.nova.edu/irb*

Appendix H

Continuing Review Approved Participation Letter for the Research Study Entitled Interpretative Phenomenological Analysis of Accessibility Awareness Among Faculty in Online Learning Environments

NOVA SOUTHEASTERN UNIVERSITY
Graduate School of Computer and Information Sciences

NSU

NOVA SOUTHEASTERN UNIVERSITY
Institutional Review Board
Approval Date: SEP 0 3 2014
Continuing Review Date: SEP 0 2 2015

Funding Source: None

IRB protocol #: 08211317Exp.

Principal investigator(s)
Rachael Trinkowsky, CRC, Ed.S
19 Laredo Place
Davie, FL 33324
561-951-4957
trinkows@nova.edu

Co-investigator:
Dr. Laurie Dringus, Ph.D.
Professor, Graduate School of
Computer and Information Sciences
Nova Southeastern University
3301 College Avenue
Ft. Lauderdale, FL USA 33314
954-262-2073

Dear Colleague,

Please accept this invitation to participate in a research study about faculty awareness of accessibility in online learning environments in higher education. This study is being conducted by Rachael Trinkowsky, who is a doctoral candidate at Nova Southeastern University. We are seeking participants who are currently teaching at least one course that is online at least 80% of the time, who have had experience with at least one student with a print related disability in an online course. For the purposes of this study, print related disabilities include: visual impairments, learning disabilities, hearing impairments and upper body motor impairments. The purpose of this study is to interview faculty in higher educational institutions to describe how online faculty gain knowledge regarding accessibility, to explore the lived experiences of online faculty who have worked with students who have disabilities, and to gain a better understanding of how faculty experience the process of accessibility implementation.

There is a pre-screening survey that involves the completion of an online questionnaire. Participation in this study is entirely voluntary and should take approximately 15 minutes of your time. Two participants will be selected to participate in a pilot study and another six participants will be selected to participate in the primary study. The next step of this study will be a telephone interview for the 2 pilot study participants and then the six primary study participants. The interviews will be audio-recorded. Each interview will last approximately one to two hours. You will be asked about your experiences of working with students with print related disabilities in online learning environments. A follow-up interview will be conducted to confirm the accuracy of the transcript and this should take approximately 30 minutes to one hour.

3301 College Avenue • Fort Lauderdale, Florida 33314-7796 • (954) 262-2000 • 800-541-6682, ext. 2000
Fax: (954) 262-3915 • Web site: *www.scis.nova.edu*

The procedures or activities in this study have the potential risks of loss of time and the possibility of disclosure of non-compliance information or other confidential data. The likelihood of both of these risks are considered to be minimal. Loss of time is a considered a minimal risk for participation in this study. The time involved for each participant in the study will be approximately three hours and fifteen minutes or less. This will include approximately 15 minutes for the pre-screening survey, up to two hours for the individual interview, and up to one hour for the follow-up interview. All measures will be taken to adhere to the time limitations to respect the needs of the participants. It may be likely that less time will be needed and a time frame of one to two hours has been estimated for the initial interview, as well as an estimated time frame of 30 minutes to one hour for the follow-up interview.

Participants may disclose information regarding non-compliance with accessibility regulations by themselves or within their respective schools. This is a medium level risk and the duration could vary. If non-disclosure information were disclosed, the risk could be long term. To protect the confidentiality of participants, the researcher will use pseudonyms for participants in both interviews and comments. Additionally, all data will be secured with password protection known only to the researcher as recommended by Cooper et al. (2012). The consent forms with the full names of participants will be kept in a locked filing cabinet available only to the researcher.

A secure computer with password protection only known to the researcher will be used, as well as a backup hard drive with comparable security protection. After a three year period following the completion of the study, all data will be destroyed in a timely manner according to IRB guidelines. Data destruction will include a full wipe of the hard drives used to store study related data and recorded interviews. Only pseudonyms and non-identifying data will be used in the final report. All information obtained in this study is strictly confidential unless disclosure is required by law. Also, the Institutional Review Board at Nova Southeastern University and Dr. Laurie Dringus may review research records.

If you have any questions about the research, your research rights, or have a research-related injury, please contact Rachael Trinkowsky and Dr. Laurie Dringus. You may also contact the IRB toll free at 866-499-0790 or via email at IRB@nsu.nova.edu.

There are no direct benefits for participation in this study. There are no costs to you or payments made for participating in this study. You have the right to leave this study at any time or refuse to participate. If you do decide to leave or you decide not to participate, you will not experience any penalty or loss of services you have a right to receive. If you choose to withdraw, any information collected about you before the date you leave the study will be kept in the research records for 36 months from the conclusion of the study but you may request that it not be used.

If you are selected to participate in the next phase of this study, which will involve a telephone interview, and you choose to participate, you will first need to consent to participation. The consent form is attached to this e-mail for your review.

A link to the pre-screening survey is provided below:
https://www.surveymonkey.com/s/OFAAS

Thank you for your consideration,

Rachael Trinkowsky, CRC, Ed.S
Nova Southeastern University (Doctoral Candidate)

Appendix I

Continuing Review Approved Consent Form for the Research Study Entitled Interpretative Phenomenological Analysis of Accessibility Awareness Among Faculty in Online Learning Environments

NOVA SOUTHEASTERN UNIVERSITY
Graduate School of Computer and Information Sciences

Consent Form for Participation in the Research Study Entitled
Interpretative Phenomenological Analysis of Accessibility Awareness Among Faculty in Online Learning Environments

Funding Source: None

IRB protocol #: 08211317Exp.

Principal investigator(s)
Rachael Trinkowsky, CRC, Ed.S
19 Laredo Place
Davie, FL 33324
561-951-4957
trinkows@nova.edu

Co-investigator:
Dr. Laurie Dringus, Ph.D.
Professor, Graduate School of Computer and Information Sciences
Nova Southeastern University
3301 College Avenue
Ft. Lauderdale, FL USA 33314
954-262-2073

For questions/concerns about your research rights, contact:
Human Research Oversight Board (Institutional Review Board or IRB)
Nova Southeastern University (954) 262-5369 or Toll Free: 866-499-0790
IRB@nsu.nova.edu.

Site Information: Principal investigator's home via teleconferencing
19 Laredo Place
Davie, FL 33324

What is the study about?
You are invited to participate in a research study about faculty awareness of accessibility in online learning environments in higher education. This study is being conducted by Rachael Trinkowsky (doctoral candidate). The purpose of this study is to interview faculty in higher educational institutions to describe how online faculty gain knowledge regarding accessibility, to explore the lived experiences of online faculty who have worked with students who have disabilities, and to gain a better understanding of how faculty experience the process of accessibility implementation.

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Initials: _____ **Date:** _____ **Page 1 of 3**

What will I be doing if I agree to be in the study?
The next step of this study will be a telephone interview. This interview will last approximately one to two hours. You will be asked about your experiences of working with students with print related disabilities in online learning environments. A follow-up interview will be conducted to confirm the accuracy of the transcript and this should take approximately 30 minutes to one hour.

Is there any audio or video recording?
This research project will include audio recording of the interviews. This audio recording will be available to be heard by the researcher, the IRB, the dissertation chair and committee, and a private professional transcription service. The recording will be transcribed by a private and professional transcription service. The recording will be kept securely on a password protected hard drive. The recording will be kept for 36 months after the completion of the study and destroyed after that time by software that will completely wipe the hard drive. Because your voice will be potentially identifiable by anyone who hears the recording, your confidentiality for things you say (or do) on the recording cannot be guaranteed although the researcher will try to limit access to the audio recording as described in this paragraph.

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Loss of time is a considered a minimal risk for participation in this study and the likelihood of this risk is also minimal. The time involved for each participant in the study will be approximately three hours and fifteen minutes or less. This will include approximately 15 minutes for the pre-screening survey, up to two hours for the individual interview, and up to one hour for the follow-up interview. All measures will be taken to adhere to the time limitations to respect the needs of the participants. It may be likely that less time will be needed and a time frame of one to two hours has been estimated for the initial interview, as well as an estimated time frame of 30 minutes to one hour for the follow-up interview.

Are there any benefits for taking part in this research study?
There are no direct benefits.

Will I get paid for being in the study? Will it cost me anything?
There are no costs to you or payments made for participating in this study.

How will you keep my information private?
All information collected in this study will remain private and confidential. To protect the confidentiality of participants, the researcher will use pseudonyms for participants in both interviews and comments. Additionally, all data will be secured with password protection known only to the researcher. The consent forms with the full names of participants will be kept in a locked filing cabinet available only to the researcher. A

secure computer with password protection only known to the researcher will be used, as well as a backup hard drive with comparable security protection. Once the analysis is complete, all data will be destroyed in a timely manner according to IRB guidelines after a 36 month period. Data destruction will include a full wipe of the hard drives used to store study related data and recorded interviews. Only pseudonyms and non-identifying data will be used in the final report. All paper documents with identifiable subject information will be shredded and recycled three years following the conclusion of all parts of this study. All digital identifying data for this study will be stored on a hard drive specifically used for the purpose of this study and information will be backed up to one or more USB drives as needed. All backup drives with identifying information will be used solely for the purpose of this study. The memory of each of these drives will be wiped after the minimum of three years has passed using software, such as Eraser (http://eraser.heidi.ie/) or comparable software will be used to destroy all identifying data relating to this study. All information obtained in this study is strictly confidential unless disclosure is required by law. Also, the Institutional Review Board at Nova Southeastern University and Dr. Laurie Dringus may review research records.

What if I do not want to participate or I want to leave the study?
You have the right to leave this study at any time or refuse to participate. If you do decide to leave or you decide not to participate, you will not experience any penalty or loss of services you have a right to receive. If you choose to withdraw, any information collected about you **before** the date you leave the study will be kept in the research records for 36 months from the conclusion of the study but you may request that it not be used.

Other Considerations:
If significant new information relating to the study becomes available, which may relate to your willingness to continue to participate, this information will be provided to you by the investigators.

Voluntary Consent by Participant:
By signing below, you indicate that

- this study has been explained to you
- you have read this document or it has been read to you
- your questions about this research study have been answered
- you have been told that you may ask the researchers any study related questions in the future or contact them in the event of a research-related injury
- you have been told that you may ask Institutional Review Board (IRB) personnel questions about your study rights
- you are entitled to a copy of this form after you have read and signed it
- you voluntarily agree to participate in the study entitled "Interpretative Phenomenological Analysis of Accessibility Awareness Among Faculty in Online Learning Environments"

Participant's Signature: _____ Date: _____

Participant's Name: _____ Date: _____

Signature of Person Obtaining Consent: _____

Date: _____

Initials: _____ **Date:** _____

Appendix J

Personal Communication Regarding the Survey Used by Ortiz, McCann, Rayphand, and Leong (2009)

From: Tracie Ortiz [mailto:tracier@hawaii.edu]
Sent: Tuesday, October 26, 2010 3:59 AM
To: Rachael Trinkowsky
Cc: kimbleh@hawaii.edu; rayphand@hawaii.edu; peterleo@hawaii.edu
Subject: Re: inquiry regarding study "Assessing Faculty Awareness,"

Aloha Rachael,

Your interest in 'Accessibility Awareness' is an important one. I too am in the same phase as you in our program here at the University of HI. Our topics are similar. I am focusing on accessibility in distance learning with an emphasis on Universal Design for Learning.

Unfortunately, we have not done any follow-up on our initial research, but I hope to do a small aspect of it when doing research for my dissertation.

As for the survey, I attached what we used in our study. We were definitely 'newbies' so we may have done it different knowing then what we know now. Maybe it can provide an idea for your final instrument.

Please feel free to email again as I (and maybe those in my group) would be interested how your research progresses.

Respectfully Yours and Mahalo,

Tracie Ortiz
Center on Disability Studies
tracier@hawaii.edu
808 956-5282

----- Original Message -----
From: Rachael Trinkowsky <trinkows@nova.edu>
Date: Saturday, October 23, 2010 8:52 am
Subject: inquiry regarding study "Assessing Faculty Awareness,"
To: tracier@hawaii.edu
Cc: kimbleh@hawaii.edu, rayphand@hawaii.edu, peterleo@hawaii.edu

Hello,

My name is Rachael Trinkowsky and I am in the dissertation phase of my studies at Nova Southeastern University in the school of Computer and Information Sciences. My professional experience is in the areas of Vocational Rehabilitation and Assistive Technology working with people who have visual impairments. I am currently working on the pre-proposal (Idea Paper) for my dissertation and I am focusing on the topic of Accessibility Awareness in Online Learning Environments.

I enjoyed reading your article titled, "Assessing Faculty Awareness, Practices, and Accommodations in Universal Design for Learning: With respect to distance education courses," and find it very pertinent to my proposed research. I would love to hear about any follow up work that you and your colleagues have done regarding this study. I am trying to find a reliable and valid survey instrument. Would you be willing to share a copy of the survey?

Thank you,

Rachael Trinkowsky, CRC, Ed.S, ABD
Technology Training and Vocational Coordinator
Lighthouse for the Blind of the Palm Beaches
Doctoral Student at Nova Southeastern University
trinkows@nova.edu or trinkows@gmail.com

Appendix K

Node Classifications

Name	Sources	References
Accessibility and usability awareness of online faculty	14	142
Awareness Gap	7	24
Faculty awareness of SWDs, as well as accessibility policies, guidelines and laws	14	118
Interactions and relationships between faculty, students, various departments and outside organizations relating to SWDs and accessibility	14	387
Collaboration with other faculty regarding accessibility and SWDs	7	25
Connections and peer support between SWDs and other students	2	5
Faculty learning about students' disabilities	12	187
Faculty relationships with SWDs	3	7
University services and departments that assist with accessibility and accommodations	13	162
Faculty who have an emphasis on accessibility, AT or working with PWDs	6	157
Accessibility is improving online	5	8
Concern for accessibility in other content areas	5	32
Connection to ODS and other similar services may be stronger with these programs leading to a higher level of accessibility	4	14
Expectation that programs with an emphasis on accessibility or disabilities will be more accessible.	4	54
Many educational tools are inaccessible or difficult to use for students with disabilities	6	49
Faculty experiences and perspectives of working with SWDs and providing accessible materials in OLEs	14	868
Culture of inclusion	6	41
Faculty experiences with various types of disabilities reported by students in OLEs	14	206
Faculty frustration with the process of accessibility implementation and students receiving needed services	8	45
Faculty have demanding responsibilities and the idea of implementing accessibility can be overwhelming	7	18

Nodes Classifications Continued.

Faculty perspective of students' perspective of OLEs and accessibility	14	249
Faculty perspectives of the advantages, challenges and comparisons of online versus traditional courses for SWDs	13	184
General technology concerns and perspectives for online faculty	3	35
Misconceptions about accessibility and SWDs	6	14
Student orientation is a good time to inform students about disability services and to foster inclusion	5	17
What would help faculty in be better prepared to work with students with disabilities	8	45
Where do faculty feel that they need to improve	4	14
Faculty training and experience with accessibility and people with disabilities	13	144
Challenges towards providing accessibility training for faculty	4	19
Faculty need versus desire for training in accessibility and online teaching in general	11	38
Prior training and experience with accessibility or people with disabilities	9	68
Workshops and other training for faculty that includes information about accessibility or working with SWDs	6	19
Faculty autonomy within OLEs as it relates to creating accessible content	8	77
Faculty can add or edit the LMS	6	23
Faculty want to have creative freedom	5	25
LMS is prescripted - Faculty cannot edit or change it	5	29
Accommodations and accessibility features used in OLEs	14	384
Accommodation or features that help students with and without disabilities	8	19
Audio and Video Accessibility	7	56
Accommodations for faculty who have disabilities	5	10
How do faculty work with students to offer help, inform them about accessibility services and determine the most appropriate accommodations	13	135
HTML elements that can be made to be accessible	8	30
More time as an accommodation	8	59
Retrofitting accessibility (is not the best practice)	5	29
Time intensive to implement accessibility	10	46

Nodes Classifications Continued.

LMS Accessibility and Usability - Learning Management System	13	407
Course components implemented in LMSs	10	76
Digital media used in online courses and faculty perceptions about accessibility and usability	12	147
LMS Helpdesk and Technical Support resources	6	13
LMS platforms experienced by faculty and their perceptions about accessibility and usability	10	65
Synchronous versus asynchronous chat usability and accessibility	9	49
Usability of navigating and accessing materials in OLEs	8	57

Appendix L

Demographics Data from OFAASQ Pre-Screening Survey

Participant	**Gender**	**Role at the primary college or university where you teach online**	**Years teaching in higher education**	**Years teaching online**	**Primary Department**	**What online or distance education courses are you currently teaching**
Joan	Female	Non-tenured faculty and adjunct instructor	6 to 10	4 to 9	Education	Braille and Research*
Noval	Female	Non-tenured faculty	6 to 10	4 to 9	Arts and Humanities	College Preparatory classes*
Catherine	Female	Tenured Faculty	6 to 10	4 to 9	English	English*
Gieuseppi	Male	Non-tenured faculty	0 to 5	1 to 3	College Preparatory Program*	College Preparatory Classes* and English*
Bob*	Male	Non-tenured faculty	11 to 15	10 to 15	Psychology	Leadership and Applied Social Psychology
Sloan	Female	Tenured faculty	16 to 20	15 or more	Rehabilitation Counseling	Rehabilitation Counseling courses*
Heather	Female	Other: Professional faculty	11 to 15	1 to 3	Special Education	Assistive Technology courses*

* Changed for confidentiality purposes

Appendix M

Data from OFAASQ Survey for Experience with People with Disabilities

Participant	**How many students with visual impairments have you worked with in online courses**	**How many students with upper body motor impairments have you worked with in online courses**	**How many students with hearing impairments have you worked with in online courses**	**How many students with learning disabilities have you worked with in online courses**	**I have a disability**	**I have one or more family members who have a disability**	**I have one or more friends and/or acquaintances who have a disability**	**I have worked with one or more colleagues who have a disability**
Joan	8	0	1	4	No	No	Yes	Yes
Noval	0	1	0	3	No	No	No	No
Catherine	0	0	0	10	No	No	Yes	No
Gieuseppi	1 (Later revealed as 2)	0	0	0	No	No	No	No
Bob*	0	0	0	5	No	No	Yes	Yes
Sloan	10	8	10	20	Declined to answer	Yes	Yes	Yes
Heather	2	0	0	1	Yes	Declined to answer	Declined to answer	Yes

* Changed for confidentiality purposes

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