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This dissertation, directed and approved by the candidate's committee, has been accepted by the College of Graduate and Professional Studies of Abilene Christian University in partial fulfillment of the requirements for the degree

## Doctor of Education in Organizational Leadership



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Dr. Joey Cope, Dean of the College  
of Graduate and Professional  
Studies

October 22, 2020

Dissertation Committee:

*Antonina Lukenchuk*

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Dr. Antonina Lukenchuk, Chair



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Dr. Scott Self



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Dr. Timothy Stafford

Abilene Christian University  
School of Educational Leadership

An Evaluation of the Impact of Professional Development on Accessibility to Online Courses  
by Students With Special Needs at a Regional Four-Year Public  
Institution of Higher Education in West Texas

A dissertation submitted in partial satisfaction  
of the requirements for the degree of  
Doctor of Education in Organizational Leadership

by

Dallas Anne Swafford

November 2020

## Dedication

Several people have provided support, love, and motivation during this final educational journey as I worked to obtain my doctoral degree. First and foremost, this is a God thing! I am blessed to have you all in my life and dedicate this step of my educational journey to you all.

To my husband, Carroll. I cannot express how much I appreciate your unconditional love, unwavering support, and the never-ending encouragement you provide to me always, but particularly when I was struggling with classes or homework, wanted to take a break, or quit. You listen to me rant, rave, and yes, continuously talk about school or homework over the last couple of years or so. I love you more than I can ever express.

To my mother, Reba. I would not be who I am or where I am today without the selfless love, guidance, and ever-present support you and Dad provided to me. Because of your dedication to raising a hard-headed daughter, I have been able to achieve this goal. I know Daddy would be just as excited as we both are now. I love you and could not have done this without you two!

To my Aunt Rita. Thank you for always loving me, being there for me, listening and providing feedback upon request, and reminding me that it is OK to take a break and work on crafts now and then. Now we can perfect the mallet smash! (Mom, consider yourself warned. We promise to protect the cars!) I love you more, AMM!

To Linda. Thank you for being a prayer warrior and friend. Although I have not known you long, I appreciate your friendship with my family and being a tireless prayer warrior with my mom and aunt! I have no doubt that you have played a considerable role in my success as well. It's time for another lunch and shopping trip! Thank you so much for your support.

To the lunch bunch – Marsha, Paula, Elisa, Debbie, and while she was with us, Suzanne. You girls are the best friends a girl could ever ask for! Our relationships have stood the test of time, and I am blessed by your friendship every minute of every day. There are not many people who are lucky enough to have friends like you girls. If we ever get through this pandemic...GIRL TRIP!! It has been entirely too long!

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Finally, a special shout out to Courtney Hernandez. We met during the first phone call I received from an admission's counselor on a Saturday afternoon because "she just happened to be in the office." I am lucky that you were able to follow me through to the end of my journey when you moved to Student Services. You are next, my friend, and I hope to be there to celebrate with you when you get to this same spot!

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## **Abstract**

Evaluation research, including qualitative and quantitative data, was used in this study to determine the impact of professional development on online courses' accessibility by students with disabilities. The study focused on online courses and course content. Data collection took place in phases and included self-paced, online professional development and one-on-one support sessions, a pre- and postsurvey, and a focus group interview. The study took place at a regional 4-year public institution of higher education in West Texas. Change theory emerged as the primary theoretical lens guiding the research as the study unfolded.

*Keywords:* Evaluation research, qualitative, quantitative, professional development, online, focus group, higher education, change theory



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## Chapter 1: Introduction

Over the last several years, while I have been a disability services provider for students enrolling in higher education classes, it has become evident that all courses the university offers should be accessible to all students, including those with disabilities. Ideally, course content, particularly in the online environment, should be accessible at the point of course creation.

Two years ago, a student with a hearing impairment submitted an application for disability accommodations. She was pursuing an online program and was completing a course with the requirement to view multiple videos and participate in discussions about the video content, among other tasks. The semester was well underway, and the student had been “managing” to hear the video content with the assistance of family members. She needed to view closed captions for the videos, but none were available at the time. The student registered with Student Disability Services approximately halfway through the semester because she needed immediate assistance to complete the course requirements and remain on track for the remainder of the term.

Staff members in Student Disability Services and the Department of eLearning immediately began listening to the videos and typing transcripts to meet minimum accessibility requirements and to allow the student to remain on track and complete the current semester with no problems. The task was time-consuming, but necessary in order to meet the requirements for institutions of higher education mandated by the Americans with Disabilities Act and the consequent Amendment Act. Staff members worked to fulfill the student’s immediate needs for access to the course material and to address her request for accommodations. After accomplishing this task, the team worked with the student’s academic advisor to begin reviewing future courses in which the student needed to enroll and complete to make progress toward her

degree completion. The employees began working to ensure the courses were accessible from the beginning of the term.

Because of the experiences and results of working with this particular student, the faculty in the College of Education requested to continue working with Student Disability Services to examine other online courses in other programs offered through the college. The two areas worked together to review the course content in all the online classes in their college to ensure an accessible format for all students. The updates first included closed captioning all videos, and transcripts for audio recordings. When these updates were complete, the team moved on to review the colors and fonts included in each course, and other aspects addressed by using Universal Design for Learning (UDL). While UDL is not the only method with which to address the accessibility of course content, instructors may find the Quality Matters rubric beneficial to use while identifying areas for inaccessible content (Bastedo et al., 2013).

### **Statement of the Problem**

In recent years, the methods used to teach courses have evolved to include a variety of teaching environments. Today students may choose to participate in courses face-to-face, online, or in an environment including both (Goralski & Falk, 2017). Contemporary university instructors teach courses in a variety of modalities, including face-to-face, entirely online, or a combination of the two (Graham et al., 2013; Murphy & Stewart, 2017). These modalities allow students, regardless of their physical locations, and without regard to varying needs to engage in higher education courses (Salimi & Kornelus, 2018; Sanga, 2017). The expansion and popularity of online courses do not always guarantee instructors have adequate training and support to recognize the importance of accessibility and the need to ensure accessible course content (Graham et al., 2013). Many administrators share concern regarding the accessibility of course

content due to federal antidiscrimination laws (Ingram et al., 2012). A final rule from the United States Access Board recently updated section 508 standards and guidelines (Architectural and Transportation Barriers Compliance Board, 2017) mandating institutions ensure the accessibility of services to students with disabilities.

Researchers refer to the combination of face-to-face and online aspects of learning in the same course as blended learning, or a hybrid environment. The number of courses institutions of higher education offer using this method is increasing rapidly (Graham et al., 2013; Haugen & Metcalf, 2018; Murphy & Stewart, 2017; Robinson & Wizer, 2016). Hence, it is vital that faculty members consider accessibility to course content in both the physical and online spaces to meet the needs of every student best (Behling, 2017; Fidaldo & Thormann, 2017; Hall et al., 2015; Murphy & Stewart, 2017).

Feingold (2017) discussed accessibility in a digital sense as “the ability of disabled people to access and interact with electronic resources” (p. 3). The availability of accessible course content benefits all students (Capp, 2017; Hartsoe & Barclay, 2017; Huss & Eastep, 2016; van Rooij & Zirkle, 2016). When course content is presented using multiple methods, all students enjoy the ability to access the content using their preferred method of learning and they often engage more frequently in class (Capp, 2017; Garrison & Vaughan, 2013; Hall et al., 2015; van Rooij & Zirkle, 2016). In particular, students with physical and learning disabilities may readily access course materials with assistive technology such as screen-reading or speech-to-text software (Huss & Eastep, 2016; Ingram et al., 2012; Moriña et al., 2015), to name but a few examples.

Madaus et al. (2018) asserted that online course accessibility is often lacking. Existing research also points to a lack of studies regarding online course accessibility (Faggella-Luby et

al., 2014; Huss & Eastep, 2016; Wynants & Dennis, 2017). More recently, studies regarding course accessibility focus primarily on student experiences – not those of faculty members, nor do these studies address the faculty’s knowledge regarding accessibility, or the reasons why inaccessible courses exist (Faggella-Luby et al., 2014). Again, additional empirical research is required to identify the reasons why many online courses are inaccessible (Faggella-Luby et al., 2014; Wynants & Dennis, 2017). Moreover, there is a lack of studies focusing on training and support provided to online faculty, or the lack of training and support (Garrison & Vaughan, 2013; Graham et al., 2013). Therefore, researching the reasons for the aforementioned problems can provide additional insight into possible resolutions.

### **Research Purposes and Questions**

The purpose of this study was to evaluate professional development of college faculty, their knowledge of accessibility to online courses by students with special needs, and readiness of college programs to deliver online courses in ways that can be accessible to all, including students with special needs. Evaluation took place in all academic colleges at a regional 4-year public institution in West Texas.

Evaluation research design appeared to be appropriate for this study because it allowed for “quality assurance and improvement” (Stufflebeam & Shinkfield, 2007, p. 25), as the faculty, course designers, and administrators ensure the courses are accessible to all students, particularly those with disabilities. Formative evaluation occurred as I requested information from the faculty about their course content and asked questions about how they approached course creation. The summative evaluation occurred as I requested feedback about the training session from the attendees of the professional development on the importance and requirement of creating accessible courses in the online environment. This feedback informed the trainers about the



quality and usefulness of the training provided (Stufflebeam & Shinkfield, 2007), and allowed for ongoing improvements, if needed. Opportunities to collaborate with faculty while reviewing and updating current coursework have resulted in a checklist we created, evaluated, and improved upon throughout the course of the research.

Many faculty members are currently teaching courses in an online or hybrid format. Some programs at the graduate level are in a completely online format and the university offers many undergraduate courses in the same manner. A review of both online and hybrid courses at the university allowed the campus to become more compliant with current federal guidelines and regulations.

The following research questions guided this study:

RQ1: How do the faculty in all academic colleges acquire knowledge about accessibility in online learning environments by the students with disabilities?

RQ2: What are these faculty's perceptions of a self-paced professional development opportunity regarding the importance of accessible online course content at this institution?

RQ3: In what ways do college programs ensure their online course content is accessible by all students, including those with special needs?

RQ4: What impact do professional development sessions regarding the accessibility of online courses have, if at all, on current course content at a regional 4-year public institution in West Texas?

## Chapter 2: Literature Review

On January 18, 2017, the United States Access Board announced a final ruling updating Section 508 of the Rehabilitation Act and Section 255 of the Communication Act. The ruling includes public-facing information, or any technology the public uses to access services, and states all services must be accessible to all individuals (United States Access Board, 2017). In the realm of higher education, this mandate affects the method colleges and universities may use to offer online courses, and the manner in which some students enrolling in face-to-face courses will access course content such as quizzes and exams. The focus of this dissertation research will address how best to lead a campus community to implement the use of Universal Design for Learning (UDL) and a checklist or rubric to aid in the creation of accessible course content.

The final rule causes a potential negative situation, which campus leaders must address, and neglecting to do so could result in damaging ramifications. Should individuals with disabilities enroll in courses that are not accessible, the university will have to take immediate action to resolve the situation. This task can often take significant amounts of time for both faculty and staff members to address the situation quickly. When employees work hurriedly to correct the situation, the opportunity for errors increases, thus negatively affecting the quality of services and content the students receive further. Researchers came to the same conclusion in a study at the University of Central Florida while developing an online course accessibility support model (Bastedo et al., 2013). The additional last-minute task might also decrease the amount of instructional time faculty and other students enrolled in the course could spend together during office hours if the professor is using office hours to correct the content. More importantly, neglecting to address the accessibility of the content causes the university to be susceptible to lawsuits, negative attention, and in-depth review by the Office of Civil Rights. Ultimately,

violations could also result in the loss of federal funding for institutions in this situation receiving government funds to operate.

Researchers are exploring best practices on the topic of offering accessible online courses, trying to identify the best way to ensure course content meets accessibility requirements, and this study will include some results and information the researchers share in the form of scholarly articles. Due to the relatively recent mandate, some gaps in the research exist which future studies should address. This review includes information about the importance of accessibility of online course content, as well as past research results regarding various leadership theories and styles. Further review results in several main themes particularly relevant to the study: course accessibility, Universal Design for Learning (UDL), best practices regarding accessibility and course design, and professional development. University administrators may find benefit from these themes as they create a new focus on the importance of creating accessible course content with the faculty, and offer training to include information and tools for success such as Universal Design, or a course design rubric or program to make the task a bit more convenient.

### **Course Accessibility**

Some may define disability accommodations at the postsecondary level as providing access to the services offered. The Individuals with Disabilities Education Act (IDEA) covers accommodations and modifications students may receive at the kindergarten through high school levels and guarantees the success of the student. At the postsecondary level, disability accommodations should not change the learning outcomes of the classes, nor should persons with disabilities be permitted to complete less work for the same credit as other students not receiving assistance. In the Executive Summary of a report to the National Center for Education

Evaluation (NCEE) which includes empirical data, the authors state, “several reauthorizations of IDEA have emphasized the importance of transition planning in providing support for students with disabilities to obtain employment, pursue postsecondary education and training, and live more independently” (Cobb et al., 2013, p. vi). Including varying methods of access to the course information allows students with differing learning needs equal access to the content (Fenrich et al., 2018).

### **Universal Design for Learning**

Universal Design for Learning is a method of ensuring course content is accessible to individuals with a variety of learning preferences. The Quality Matters rubric is one method of measuring the accessibility of course content. Both provide guiding principles for designing course content, including content in the online environment. Researchers of one empirical study provide an overview of the Online Course Accessibility Support Model which represents accessibility in three pillars: Universal Design for Learning, proactive requests, and immediate need; each pillar moves respectively from faculty- to services-centered (Bastedo et al., 2013). The research incorporates UDL, professional development programs, campus-wide communications and support, and online resources to assist the faculty with course design using the new model (Bastedo et al., 2013).

Other researchers have found UDL can also be useful to individuals who teach in a blended class, where students use a learning management system to complete quizzes, exams, or upload assignments (Al-Azawei et al., 2017). UDL benefits instructors, instructional designers, and students alike. Using UDL to create course content allows greater access to the course information for all students, as everyone can access the content and accurately reflect their knowledge of the content using varying methods (McAndrew et al., 2012). UDL is a holistic

approach to “assist faculty with designing, developing, and delivering online instruction that addresses the needs of all learners” (Houston, 2018, p. 97), and allows students to use three primary brain networks, including strategic, recognition, and affective networks of the brain, the parts that allow students to address the how, what and why questions (Robinson & Wizer, 2016, p. 19).

### **Best Practices Regarding Accessibility and Course Design**

Moorefield-Lang et al. (2016) shared that a large majority of online instructors do not think about the accessibility of their online course while preparing the content. Not considering the accessibility of course content at the point of creation can cause a significant amount of time, effort, and financial funding in a very reactive environment. Some “studies have shown that instituting accessibility standards at the onset is a significant savings to adjusting for accommodations after a system has been developed and launched” (Coleman & Berge, 2018, p. 4). Instructors and instructional designers should consider making images, audio files, videos, and documents accessible in the online environment (Sokolik, 2018). Martin et al. (2019) believed “award-winning faculty perspectives can be translated into actionable and valuable best practices, standards, and competencies for faculty designing and delivering online courses in institutions of higher education” (p. 43). These best practices are often shared in the form of a rubric which can guide content creators as they build online courses (Legon, 2015).

### **Leadership Theories and Professional Development**

Leadership theories can be useful in encouraging the faculty to review their courses using a rubric or accessibility checker such as Ally, a tool housed within Blackboard, the university’s learning management system. Leadership “theory is only useful if it allows professionals to effectively perform their work and understand the social and political constraints that surround

them” (Zambo, 2014, p. 506). Leaders may consider the following theories beneficial while working with colleagues to review or create course content using a new design tool.

### ***Change Leadership***

A recent study resulted in the conclusion that change leadership, when combined with a social interaction approach, can help leaders manage change in a way that employees commit to the change with increased self-efficacy as it relates to the change, building cohesiveness as employees work together as a group toward the change, and ending in positive results (Ling et al., 2018). Some literature reflects “that employees’ belief in organizational ability to accommodate the changing situations, policies supporting change, trust in peers and leaders, and participation at work could increase individual readiness for organizational change” (Choi, 2011, p. 482). Alfes et al. (2019) found when an organization’s human resource department is involved in the change, employees may accept the organizational change more readily. The human resource area could assist with future communication with faculty about the need for importance, and requirement of completing the training should administrators decide to make the professional development mandatory in the future.

### ***Transformational Leadership***

Transformational leadership styles increase the motivation of followers and increase job satisfaction (Rahbi et al., 2017). This leadership style could be useful in providing professional development opportunities as we work with faculty members while assisting in the review and making updates as needed to their course content using a rubric or content design process. Furthermore, the results of past studies indicate many individuals view transformational leaders as more ethical, particularly while handling difficult situations or tasks (Bass & Riggio, 2016). Because of past negative experiences between faculty and staff communicating about the

accessibility of courses, careful consideration must be given to ensure transparency while approaching the topic of accessibility once more. Using a transformational leadership style to tell stories about the past and using other forms of one- and two-way communication can inspire change among colleagues and followers within the organization (Aidman & Long, 2017; Jensen et al., 2018).

### ***Authentic Leadership***

Transformational leaders must ensure they are acting authentically. Employees often view authentic leaders as more genuine and more effective than others (Caza & Jackson, 2016). One study reflects four variables many followers connect with authentic leadership: self-efficacy, hope, optimism, and resiliency (Jiang & Men, 2017; Otaghsara & Hamzehzadeh, 2017). These variables are useful while working to complete a difficult task, working through frustration, encouraging a team during a difficult time, or motivating members of a team toward obtaining an organizational goal (Otaghsara & Hamzahzadeh, 2017). Examining and updating course content to ensure accessibility can seem like a stressful and difficult task for faculty members, and I worked with the participants to minimize any difficulties they encountered and provided encouragement and assistance during the task.

### ***Empowering Leadership***

The use of an empowering leadership style when presenting the information about a new method to utilize, might allow faculty members to feel a sense of responsibility to ensure their courses are accessible. Empowerment is one skill a transformational leader may possess, and teaching faculty how to use a rubric to ensure their courses are accessible before students can enroll for the course, is one example of empowerment which could be the key to successful implementation of the plan (Bastedo et al., 2013; Khan & Ismail, 2017). An increase in self-

efficacy occurred as the course designers learned the new procedure for course review and design updates. As leaders encourage their colleagues to work as teams using empowering leadership behaviors, past research reflects an increase in motivation may also occur (Martin et al., 2013). Training included working sessions in which teams comprised of faculty and staff worked together to review course content.

### ***Adult Learning Theory***

Adult learning theory posits that as individuals mature, they begin to wonder why they need to learn something new, how it will pertain to their careers or social roles, how much time it will take to learn, and how long will it take for them to apply it directly to their current lives or situations (Beard, 2017). Over time, as the use of technology in our work and personal lives continues to increase rapidly, the time adults plan to spend participating in professional development decreases. It is often difficult to find time to continue to expand our knowledge as it relates to our careers, particularly when the training takes place off-site. Online learning is becoming increasingly popular with adult learners as individuals seek to increase knowledge about their profession as they balance their responsibilities (Yarbrough, 2018).

### ***Professional Development***

Employees at some institutions of higher learning across the nation partner with a faculty learning commons or other departments on their campuses to provide professional development about the importance of accessibility for online courses, or to conduct an accessibility assessment (Ceresnova et al., 2017; Moorefield-Lang et al., 2016). Some research studies found a lack of employees on their campus who are properly trained on accessibility issues (Ceresnova et al., 2017). Self-paced online professional development is one method that can create a significant impact on the knowledge of adult learners in the campus community (Liu et al., 2016; Rizzuto,



2017; Teräs, 2014; Yarbrough, 2018), offering an opportunity for faculty to improve their current courses in a nonthreatening, self-paced manner.

Adult learning theory acknowledges that as adults mature, and become increasingly busy, they want to be assured what they learn will be beneficial and will improve their circumstances in some manner. If resources are included in their professional development helping them to increase the accessibility of and improve their course content, the benefits will become evident, particularly if the resources allow this task to be easily accomplished. Offering the professional development in a self-paced, online setting, allowed individuals to participate in and complete the training on their schedule and at their pace. Resources such as an accessibility indicator available in an online course accessibility checker such as Blackboard's Ally module provided, or a checklist or rubric a faculty member used to review their course content are other methods adding to the recognizable benefits of participating in the professional development opportunity regarding course accessibility. "Blackboard Ally is a revolutionary product that integrates seamlessly into the Learning Management System and focuses on making digital course content more accessible" (Blackboard, 2020, p. i). Further, another example including how characteristics of Adult Learning Theory can be tied to the professional development opportunity is teaching the faculty members specifically how the material pertains to evaluating their content and using the new knowledge to strengthen and improve the content for their current and future courses.

### **Summary of Literature Review**

Given the details and information learned during the literature review, it is evident that course accessibility for all students is of utmost importance, but particularly for students with disabilities. Recently, studies on the topic revealed best practices to guide others toward all

courses being accessible. Adult Learning Theory, Change Theory, and literature regarding professional development, guided the study as I created training modules using a method more convenient to faculty members, and in a format best suited to the participants. Finally, while Universal Design for Learning is one popular method to guide the creation of courses in an accessible manner, Blackboard Ally is another convenient tool the participants utilized to update current course content.

A thorough review of literature and other scholarly research studies and topics were analyzed as they could easily apply to the current study. Topics included course accessibility, Universal Design for Learning, and best practices in the areas of accessibility and course design. A variety of leadership theories were reviewed in an effort to thoroughly consider a theoretical framework which could guide the research effort. Although evaluation research is pragmatic in nature and the theoretical framework for such a study often emerges as the study progresses, it is important to carefully review and consider any theories which could possibly guide such an effort. For this reason, change theory, transformational leadership, authentic, and empowering leadership, and lastly adult learning theories were reviewed. All of these theories could apply specifically to guiding change and introducing new professional development opportunities on a university campus.

### Chapter 3: Methodology

This study employed improvement and accountability-oriented evaluations (Joyce, 2010) that “stress the need to fully assess a programme’s value” (p. 9), while involving faculty in professional development, which stressed the importance of the accessibility of course content for all students. Faculty were invited to review their existing course content for accessibility, and to use tools provided to create future courses that are accessible at the point of creation. Further, participating in professional development and the review process afterward were meant to “foster improvement and accountability through informing and assessing programme decisions” (Joyce, 2010, p. 9). This step in the study allowed for an evaluation of the training, support and resources provided, and information to guide future improvements to the resources and services as needed.

Including both formative and summative evaluations in this study allowed for the determination of whether or not training had an impact on the way faculty approached the creation of course content. The study took place at one institution of higher learning in West Texas. The sample included faculty members teaching courses within all academic colleges at the university during the summer terms. Put differently, this study included “*reasonable expectation* to give advance warning that the data analysis must lead toward interpretations that are credible to clients who proposed the questions that triggered the study” (Stufflebeam & Shinkfield, 2007, p. 25). The study unfolded in phases: an initial survey, training, individual support sessions, a focus group, and a final survey.

#### **Theoretical Lens**

There is an increasing need for professional development using an online, self-paced format (Rizzuto, 2017; Teräs, 2016). Gunter and Reeves (2017) believed “Professional development that is built using experiential learning fosters internalization of learning. People

learn by doing. Authentic, hands-on experiences that are embedded into the professional learning experience can change educators' perceptions and teaching practices" (p. 1306).

The theory of change was instrumental to informing this study's research purposes and questions, as well as data gathering tools and data analysis processes. One of the main precepts of the theory of change is "to enhance faculty knowledge and practice related to teaching and learning and through doing so improve student learning and foster change in institutional values and practices related to teaching and learning" (Amundsen & D'Amico, 2019, p. 196). Providing opportunities for the participants to work both independently and together as part of a team strengthens findings from Ling et al. (2018). Ling et al. (2018) found using the theory of change to provide opportunities for individuals such as those described above results in individuals being able to accept change more readily. Research from Choi (2011) reflected that when operational policies and procedures reflect the need and requirement of the change, the organization moves more seamlessly through the change as well. The present study includes each of the aspects above: enhancing faculty knowledge, working both independently and as members of a team, supporting each other while remediating content, and learning about new resources available to help work through content remediation. The theory of change slowly emerged while each phase of the study unfolded. Finally, the subcommittee working to prepare the operating policy to reflect the necessity of the change further emphasizes and highlights yet another aspect of the theory of change.

### **Research Design**

Evaluation research allows researchers to examine current programs or processes to determine if employees should make changes to improve. Formative and summative evaluation allowed me as the researcher at this regional 4-year public university to prepare and complete

professional development about the importance of accessibility to online courses for all students, and then provided opportunities to review current online course offerings, making necessary changes to ensure accessibility.

### ***Site and Participants***

This evaluation research study took place in all academic colleges on the campus of a 4-year, public university in the West Texas region. The potential pool of participants included all faculty members teaching in either the first or second semester, or both semesters of the 2020 summer term. Approximately 201 faculty members taught and designed courses throughout the summer, and there is a minimal online component associated with every course. The organization requires the upload of a course syllabus and curriculum vita for each instructor in the course. Every course at the university must include these two forms of information.

As prospective participants of this study, the college faculty who teach online courses were identified and invited to participate in the study. The initial survey was sent to all faculty teaching during the summer. The same group was asked to participate in the training modules, as well. Only the faculty teaching online or hybrid courses were included in the study. The last part of the study allowed faculty members teaching completely online or hybrid courses to utilize the tools from the training to review and update current course content, and to upgrade the content, if needed, to be accessible to all students, including those with disabilities.

Therefore, purposeful sampling “that allows the evaluator to focus on key informants to obtain information” guided the research (Stufflebeam & Shinkfield, 2007, p. 711). The study included faculty members teaching in all academic colleges in an online or hybrid environment. All instructors teaching courses at this regional university are required to include some aspect of the learning management system into their courses. The content they upload in the system must

be accessible to all students, including those with disabilities. However, more importantly, those who administer exams/quizzes, or information the students must utilize to complete course requirements are the courses most affected by the Access Technology Board ruling (United States Access Board, 2017).

### **Sources of Data and Strategies of Data Collection**

This study offered professional development in the form of an online, self-paced training session with information about the Americans with Disabilities Act, and the federal guidelines and requirements governing accessible online course design. The training also included information about closed captioning, transcripts, fonts, colors, and alternate tags for images.

#### ***Questionnaires***

Questionnaires are one tool which gauged the level of awareness before and after the training module. Stufflebeam and Shinkfield (2007) revealed “Questions-oriented program evaluation addresses specified questions, often employing a wide range of methods” (p. 711). To gather data which would help answer the first three research questions, a questionnaire was developed (Appendix A) and administered before the professional development modules and a second questionnaire (Appendix B) was administered after participants completed the professional development modules to determine if the training impacted the perception of the participants on the topic of accessibility of online course content. The questionnaires developed for this study reflects how faculty are trained on accessibility, what their perceptions are about the training and online course design, and how academic colleges ensure online course offerings are accessible.

### ***Documents***

Syllabi and the course content of current course offerings comprise documents and online course content as additional sources of data and provide information to answer the fourth and final research question. A review of current course content at the beginning and end of the study determines if the information and resources the faculty members received during the professional development changed the accessibility score of the content. The review of this content strengthens the research and adds another component to the process of triangulating the data. Many researchers believed “Triangulation adds depth to the data that are collected” (Fusch et al., 2018, p. 19). Incorporating documents and content from courses the institution currently offers “incorporates fundamental principles recognized by the profession” (Stufflebeam & Shinkfield, 2007, p. 714), and reflects evaluation research based on standards. Documents reviewed include but are not limited to course syllabi, various files uploaded as required content in various modules in various summer courses, and transcripts from audio recordings housed within some courses. Also, a review of all accessibility reports for each course included in the study was reviewed. Reports for specific classes were requested and provided while the participants were remediating their content and provided a method for them to gauge the impact of remediation on the overall accessibility score for their class. Lastly, the overall accessibility report for the institution as a whole was collected at the beginning and the end of the study to determine if there was an impact of content remediation that occurred in the study on the overall accessibility score of the institution.

### **Professional Development and Evaluation: Implementation and Analysis**

At the time this study was conducted, many opportunities existed for professional development at the university, some of which are mandatory, such as Information Technology

Security Awareness, Campus carry, Cart Safety, Title IX, Sexual Harassment Awareness, and Ethics trainings. The university offers the training sessions to university employees as online modules through Blackboard, a learning management system. The Human Resources office handles the correspondence regarding this training. Employees must complete the training at regular intervals. The institution requires employees to pass a quiz about the content of the training with a score of 80% or greater.

Working with colleagues in the eLearning department, and with approval of the Provost and Vice President for Academic Affairs, an online training module was created about the importance of and necessity for the accessibility of online course content and is included in this study. I worked with eLearning to review various training modules offered by outside organizations such as Blackboard Academy and SiteImprove to determine if training currently in existence was appropriate and affordable enough for the university to offer to the student participants and possibly later to the campus community. Eventually, the group determined creating the training in-house was the best option.

Training modules include resources for helping faculty review their current courses using Ally, an accessibility checker offered through the learning management system, as well as specific information about why accessibility is required, how specifically to remediate content in various programs such as Microsoft Word, PowerPoint, and other software programs, and finally a short quiz to gauge the awareness of the participants at the conclusion of the training. When the campus officially launches the training to the entire campus community, the university's human resource office will communicate with employees about the availability, and the deadline to complete the training. Those who do not meet the deadline, will receive a reminder before



forwarding their names to the dean of the academic college as an escalation measure, a step currently in practice with online training for university employees.

### **Validation Criteria**

Adhering to the standards for evaluation is essential. Chen (2015), when referring to thoughts shared by the Joint Committee on Standards for Educational Evaluation, shared “the need for evaluation to address stakeholders’ views and concerns is clearly reflected in the four standards of program evaluation: utility, feasibility, propriety, and accuracy” (p. 392). Utility standards help increase the value stakeholders place on the outcomes of the study. The participants in the focus group were asked specific questions about the value of the training and support they received in the one-on-one sessions. Feasibility increases the effectiveness and efficiency of the research. When planning for the study, particularly after the pandemic began to unfold, it was important to gauge the feasibility and propriety of launching the study during a time when the campus community was already working through an unprecedented situation. To help determine the feasibility and propriety, I visited with both my committee members, the university administration and the Institutional Review Boards at both the study institution and Abilene Christian University to ensure the timing of the study would be appropriate. Accuracy and accountability are always important in any research and are expected. After the determination was made to move forward with the study, the data collection methods were changed to allow for accurate data collection and to ensure as a researcher I could maintain accountability for the entire study, including data collection and analysis.

Reflexivity “is most often linked to the act of critically reflecting on the practice and process of research and on the researcher’s role” (Xerri, 2018, p. 37). Additionally, to practice reflexivity, a journal of self-reflective notes aids in the practice reflexivity. The journal allowed

me to remain aware of any thoughts or preconceived notions regarding the study or participants since it is possible that I may have worked closely with some of them in the past.

Next, triangulation of data sources and methods of analysis is another method to ensure validation of research findings. Thus, I collected data from multiple sources such as questionnaires, program and institutional documents, and surveys. A review of the report providing scores on the accessibility of courses at the beginning and the end of the study allowed me to determine how the level of accessibility changed as the faculty learned more about the need for accessibility and used the resources provided in the training to update their course content and ensure access to the content by all students, including those with varying abilities. A questionnaire provided insight to the faculty's perceptions regarding the accessibility of their courses before receiving training, and an evaluation of the training session asked the participants to rank their perceptions about the accessibility of their courses after completion of the training modules. Triangulating the data in this way ensures "the consistency of outcomes from varying sources and methodologies for measuring a particular construct" (Stufflebeam & Shinkfield, 2007, p. 717). Further validation was ensured when purposeful sampling was used to identify specific faculty who were teaching completely online or in a hybrid environment during the summer terms. This specific population was identified as potential participants and the final group was determined by those individuals who accepted the invitation to participate by submitting the signed consent form. After moving through each phase of the research study, work began to analyze the data collection.

## **Chapter 4: Data Analysis**

This chapter presents the findings of the evaluation research study conducted at a 4-year public university in West Texas. First, analysis focuses on the representation of the institutional structure in terms of providing services to the students with disabilities enrolled in online courses. Next, I discuss the staffing and budgetary structure as it applies to assisting the campus community with creating accessible course content. Further, I address the functionality of the office staff as compared to the increase in the both the number of students served and the amount of faculty support. Finally, the chapter underscores the findings of this study as they pertain to the standards of evaluation and a thematic analysis of the findings that respond to the research questions posed for this study.

### **The Role of the Student Disability Services Office in Accessibility**

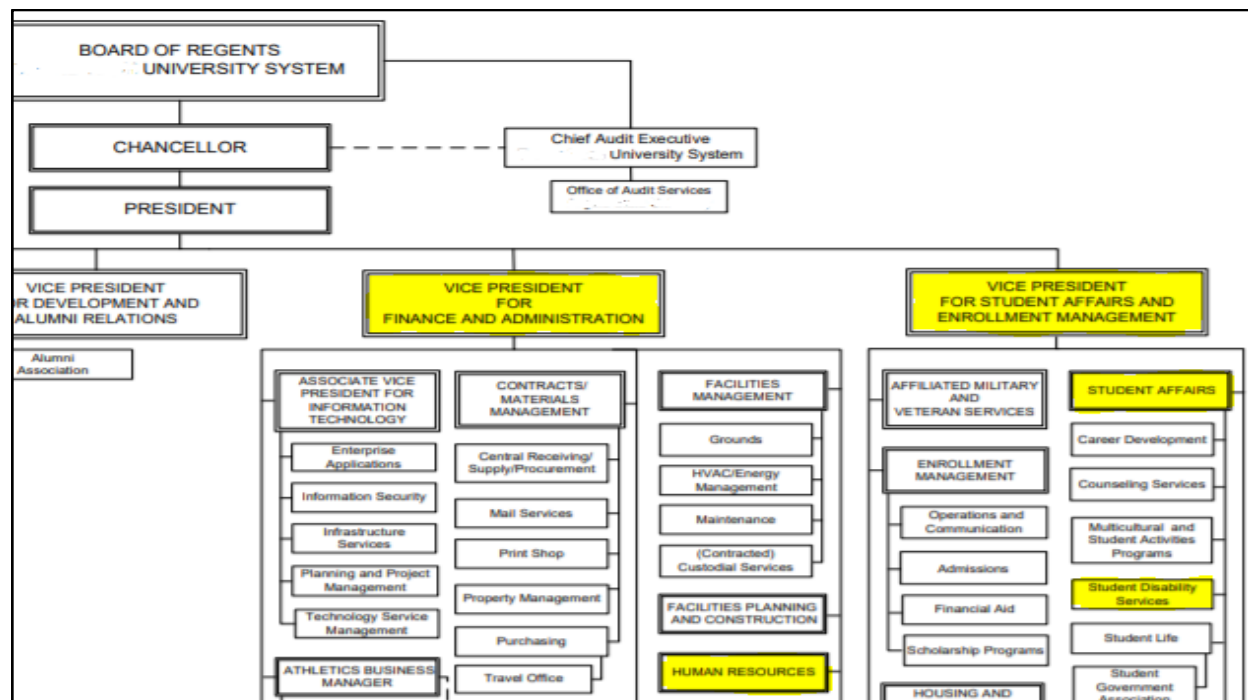
The role the department of Student Disability Services serves in the accessibility of courses is not the same at every institution of higher education (IHEs). Not all IHEs structure their disability services the same way. Some universities elect for one department to address the needs of both employees and students, and others separate the two. Administrators may not only elect to separate employee and student accommodations into two departments, but the departments may also fall into two separate divisions. The organization may also structure such services system wide depending on the system of which the university is a member. The role of the office and the reporting structure is important because the services and support provided to the campus community often is the result of a collaboration of efforts and resources not only between departments, but often between operational divisions.

## Reporting Structure

The study institution is a member of a larger university system within the state of Texas. Disability services for employees and students are separated into two departments. The Human Resources office handles disability accommodations for university employees, and the department of Student Disability Services is responsible for accommodations for students with disabilities. Surprisingly, the organizational structure for Student Disability Services is different at this institution than at others within the greater university system. A snapshot of the organization chart (Figure 1) for the university illustrates the divisions. The Office of Human Resources reports to the Vice President for Finance and Administration, while Student Disability Services reports to the Executive Director of Student Affairs who then reports to the Vice President for Student Affairs and Enrollment Management.

**Figure 1**

*Snapshot of Institutional Organization Chart*



Information in Figure 1 does not include the departmental structure for the area responsible for updating and maintaining the learning management system. The Office of eLearning houses this responsibility and is accountable for training faculty and staff on the system. This department reports to yet another vice president and is housed within the Department of Information Technology. This information is important because Student Disability Services and eLearning work together regularly to ensure students with disabilities acquire access to courses while utilizing their accommodations. The departments also collaborate together frequently, pooling human resources and finances to provide information and training for targeted audiences upon request.

### ***Staffing and Budgetary Resources***

Approximately five years ago, the department of Student Disability Services was created when the university reorganized the Student Life division. Until that point, there was a Dean of Student Life who was responsible for student life, Title IX investigating and reporting, and providing accommodations for students with disabilities. University administrators made the decision to reorganize the division separating each area above into separate departments housed within the division of Student Affairs and assigning a director to oversee each department. This move provides specific staff working in each department resulting in greater attention to detail for each area, and an increased level of service to students.

Since the reorganization, the services the university offers to students with disabilities continues to increase. The number of students the university serves in the department also steadily increases each year and has over the last five years. To date, the number of students who register with the department just exceeds 400, compared to five years ago, when students registering for services with the department was a mere 45. The number of full-time employees

in this area continues to remain at one, the director of the department who leads a small team of two graduate student staff members. The university houses the department within an office suite which includes Student Conduct and the Behavioral Intervention Team, allowing all departments to pool human resources. Between the three areas, employees working within the office suite include three graduate assistants, a student assistant, an office coordinator, two additional full-time employees overseeing each area, and the executive director of the division. The group works very closely together to ensure the staffing needs of each area are met and operate seamlessly. All staff members in the office suite are cross trained to provide the best service to all faculty, staff, and students at the university.

Student Disability Services has a departmental budget which includes money for a variety of expenses. This money is available for day-to-day operating expenses, technology, programming, student staff wages, and training, both for the director at professional conferences and for awareness programs for the campus community. The money is most importantly available to provide reasonable accommodations for student with disabilities. The accommodation expenses include but are not limited to real-time captioning of lectures, sign language interpreters, closed captioning of videos, recorders, laptops, and other technology offered to students to assist with notetaking and recording lectures. The recent purchase and implementation of a new software system allows the department to operate in a paperless environment and maintain all records in a secure online fashion.

### ***Functionality***

Due to the continuously increasing number of students the department serves, and the additional support the department provides to faculty, a request for the department to also provide test administration for students with accommodations resulted in all of the academic

deans pooling their money to fund an additional graduate assistant in disability services to help with exam administration. This act further reflects the increase in requests for services the department provides without additional support for another full-time staff member from both students and the campus community. A request for this additional position has been submitted annually for the last four years. The new system mentioned above also includes an alternative testing module which the department plans to launch soon. Doing so will further streamline the process of working with faculty and administering exams to students with accommodations.

In general, the university is currently a very reactive environment as applicable to accessibility. Many faculty and staff members do not consider the accessibility of services until someone mentions the topic, or a student requests and requires an accommodation to access any classes, services, or facilities on campus. It is at that point the conversation begins and last-minute action occurs to resolve the inaccessibility of the services the university provides. This scenario occurs in face-to-face classes and some university events, but the focus of this study remains on courses in the online environment. The hope is using evaluation research to conduct this research will result in changes to the mindset of faculty, staff and administrators at the institution to recognize and appreciate the urgency to consider accessibility at all times, but particularly at the point of creating content for online classes.

### **Standards of Evaluation Research**

Chen (2015) reflected on the importance of the four standards for evaluation and validation. The four criteria include utility, feasibility, propriety, and accuracy. There is one additional standard, that of evaluation accountability (Yarbrough et al., 2011). Yarbrough et al. (2011) appropriates the initial four standards and includes the fifth additional standard.

### *Utility*

Yarbrough (2017) described utility as building a scholarly foundation “to identify the domains of research and practice scholarship that should be reviewed and then craft ways for that knowledge to inform the standards and ancillary materials” (p. 286). This area includes evaluator credibility, attention to stakeholders, negotiated purposes, explicit values, relevant information, meaningful processes and products, timely and appropriate communicating and reporting, and concern for consequences and influence.

While conducting my research, I also work as the Director of Student Disability Services at the study institution; therefore, the campus community looks to me as the ADA Coordinator for Students for information regarding disability accommodations, accessibility, and knowledge of the laws covering these areas. The nature of this relationship between myself and the campus community establishes evaluator credibility. Asking questions of the participants regarding their current knowledge in all areas of accessibility and listening to their feedback reflects the attention to stakeholders required for this standard of utility. I consider their current needs, and reflections and thoughts about how I can continue to offer the support they desire moving forward after the study concludes. Timely and appropriate communicating and reporting is a common practice throughout the study as I communicate with the participants as they email, call, and meet with me to either ask questions or discuss the next phase of the research. As many of the faculty review and remediate their course materials, they can email and request another accessibility report in Ally in hopes of seeing an increase in the accessibility ranking for the content. This type of communication not only reflects the timely and appropriate communicating and reporting but also speaks to the area of concern for consequences and influence.



In preparation for the study, a review of the current resources available to faculty members at the institution about the importance of and need for all course content to be accessible to individuals with disabilities occurs. Consideration focuses on the current campus culture and prior communication with faculty on the subject. As the Director of Student Disability Services, I frequently communicate with faculty regarding accommodations for students with disabilities enrolling in their courses. In some cases, I share how to provide the accommodations for these students. Previously, focus concentrated on how to provide a specific accommodation, not necessarily on the reason for and the importance of accommodations in general.

Reflecting on the information above leads to a search for training on the topic of accessibility of services for university employees. The university administration does not currently require specific training on this topic. Much of the “training” has been in the form of faculty calling Student Disability Services and asking questions as the need arises. Accommodations must be reasonable, but not provide the student who receives the assistance with any undue advantage over other students without disabilities. Attention to the stakeholders in cases such as this includes making sure the accommodations do not change the learning outcomes for which the faculty prepare for the class. At the same time, the university must guarantee access to the course content for any student, particularly those with a disability. All students must submit the same amount of work. Making sure the faculty member is “getting what they need” from the student is equally as important as making sure the students “get what they need” from the faculty member in order to access the course materials. Each of the details above builds on the scholarly foundation supporting the standard of utility.

### *Feasibility*

According to the Program Evaluation Standards (Yarbrough et al., 2011), the area of feasibility includes project management, practical procedures, contextual viability, and resource use. During the planning stages of the study, a demonstration of project management occurs as consideration is given to participant selection, preparing for each step in the study, and the practical application of each phase.

To address contextual viability, effectively presenting the study is imperative. The faculty were recently forced into a somewhat tricky situation while transitioning to an online environment due to the Corona Virus (COVID-19) pandemic; many faculty are not familiar with teaching online or from a distance, nor have they been trained on how to effectively do so. A useful and practical timeline for the faculty is necessary to best assist the professors who are in the midst of preparing for summer class offerings in the same format. The schedule also ensures timely research completion. This step provides the contextual viability Yarbrough et al. (2011) mentioned to strengthen the feasibility of evaluation research further. The schedule for each phase of the study provides participants with just enough time to complete the necessary tasks without rushing. Reminders to the faculty keep them moving through each phase seamlessly. Careful consideration of all the above information is necessary not only to provide feasibility to the study but also to ensure the research procedures are viable and meaningful to the participants, while also producing valid results. Careful consideration of the scheduling for each step of the research safeguards the feasibility and practicality of active participation by all consenting individuals.

### *Propriety*

As the authors of the Program Evaluation Standards explain, propriety includes responsive and inclusive orientation, formal agreements, human rights and respect, clarity and fairness, transparency and disclosure, conflicts of interests, and fiscal responsibility (Yarborough et al., 2011). The requirements of the Institutional Review Board ensure all individuals invited to contribute to the research opportunity are knowledgeable about the study through the invitation to participate and introductory material the request includes. Signing the consent form indicates a willingness to take part in the study. The formal agreement includes a study description and notification the instructor may withdraw at any time with no consequence. The consent form alone covers the areas of orientation, and transparency and disclosure (describing the study), formal agreement (signing the consent form), and human rights and respect (explaining the participants may elect to withdraw at any time). After submitting the consent form, a link allows the participants to conveniently complete the initial survey in a short period of time.

Approval of submitted information by the Institutional Review Boards (IRB) at Abilene Christian University and the study institution is not only required, but necessary to provide structure, clarity, full-disclosure, and to identify and avoid any possible conflicts of interest. At one point, a consideration of the support the Student Disability Services department provides to faculty members is necessary to determine if the same offering can be part of the study while still acting in a fiscally responsible manner. The department of Student Disability Services routinely offers funds and support to faculty members to add closed captions to any videos they include in the modules of their online classes. Serving as both the researcher and the Director of Student Disability Services, it was necessary to consider if also offering this service to the participants as a form of support during the study creates a conflict of interest or might demonstrate financial

irresponsibility. This consideration is demonstrative of transparency and disclosure, and fiscal responsibility, further ensuring the propriety of the study.

### ***Accuracy***

Accuracy involves justified conclusions and decisions, valid information, reliable information, specific program and context descriptions, information management, sound designs and analyses, explicit evaluation reasoning, and communication and reporting (Yarborough et al., 2011). Collecting and thoroughly analyzing all data, ensures a clear and precise explanation of the results. During the focus group and in the final survey, a request for candid and uninhibited feedback is made, frequently asking for information including “the good, bad and the ugly.” To further encourage such feedback, participants have another opportunity to anonymously submit answers to the survey requesting their input about the support and professional development provided during the study. This document includes valid and reliable information which is carefully recorded and is shared precisely. The selection of evaluation research methodology is best to clearly and effectively present the results of the study.

### ***Evaluation Accountability***

Yarborough et al. (2011) stipulated that evaluation accountability includes evaluation documentation and both internal and external meta-evaluation. This information may consist of a cost/benefit analysis, program implementation, the benefit to stakeholders, and possible improvements to the program. Notetaking and journaling throughout the study is a necessary process in evaluation accountability. Consideration of each of these aspects allows for continuous program improvement on a larger scale that should result in a positive impact and more significant benefit to the organization overall.

A careful analysis includes the university's currently available training, support, operating policies and procedures relating to course content accessibility, and the entire university's responsibility to provide such content. A review of the same information at other universities of the same size and in the same region is necessary to consider providing the best benefit to the stakeholders. This task will also strengthen and justify any suggested improvements to the program if needed.

### **Data Analysis Process**

As indicated in Chapter 3, this study was conducted in several phases: (a) administration of an initial survey, (b) an online professional development session, (c) one-on-one support sessions, (d) a focus group interview conducted as a follow up after the professional development session, and (e) a post professional development session survey. Qualtrics, a survey software the university offers to all faculty and staff, was useful in preparing both surveys for the study. The software includes a reporting tool allowing users to analyze the data collection thoroughly. Blackboard, the university's learning management system (LMS) was used to create the training for the study and analyze the data collection within the professional development training modules. Lastly, WebEx, a virtual meeting tool available to all university employees was useful both while meeting with the participants in the one-on-one support sessions, and while hosting and recording the focus group interview. What follows is the description of the participants' profiles and the analysis of all aggregated data based on meaningful categories that address the research questions.

### **Participants' Profiles**

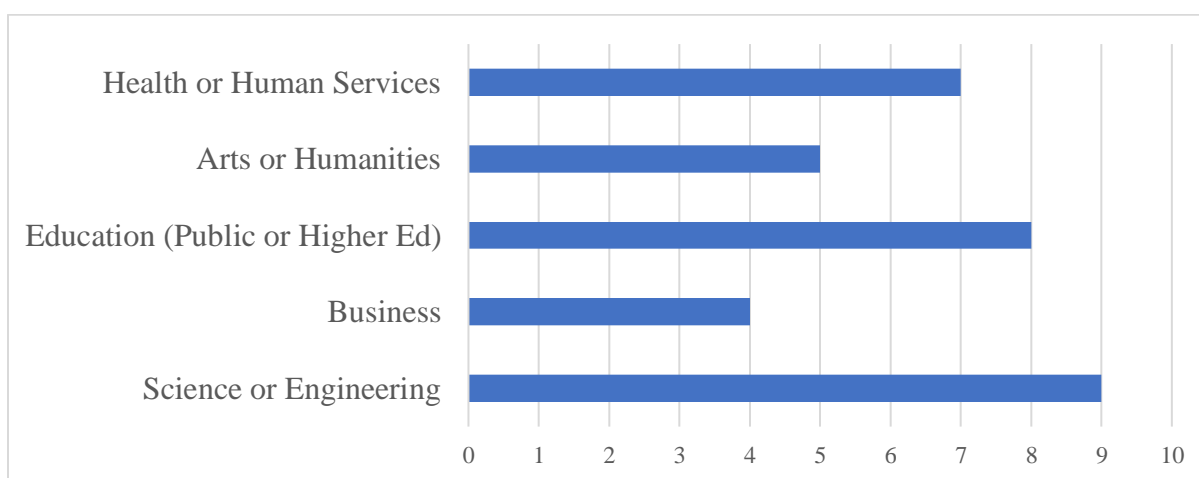
A total of 33 participants agreed to participate in this study. The initial survey asks questions to provide general information about the participants, and to gauge the group's initial

knowledge of accessibility and perceptions of their current course content. The survey also requests information about past training experiences and requests the group's initial thoughts on various means of accessing information and learning.

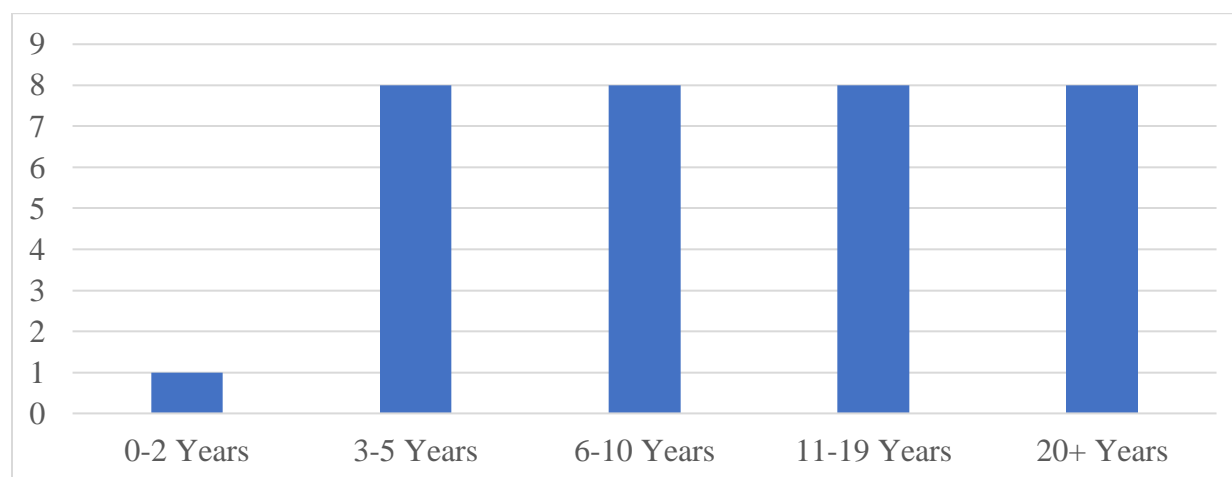
The following figures contain visual representations for the participants. Figure 2 contains the individuals' representation by academic categories, and Figure 3 represents the group's years of experience teaching in higher education.

## Figure 2

### *Participant Representation by Academic Category*



Seven individuals teach in the fields of Health or Human Services, five represent the fields of Arts and Humanities, eight represent the areas of Public and Higher Education, and four from the Business programs. Finally, nine individuals teach in the areas of Science or Engineering.

**Figure 3***Years of Teaching Experience at the College Level*

One participant possesses two years or less of experience teaching in higher education, and eight individuals report experience falling into each of the remaining four categories: three to five years, six to 10 years, 11-19 years, and 20-plus years of experience. While each category here is represented, this information further confirmed thoughts regarding the campus community at the university. Employees at this university tend to keep their positions for extensive periods of time before leaving or electing to retire. This information could indicate the instructors are comfortable in their jobs and enjoy the status quo. However, the survey does not contain a question covering why the faculty members choose to remain in their position. More importantly, when tied with the current knowledge of this group as it relates to their reported knowledge of accessibility, which is covered below, the experience represented by this group is intriguing. Given the years of experience the participants share, surprisingly, there is not a high level of knowledge regarding accessibility or the need for focusing on such.

***Participants' Initial Knowledge of Accessibility***

Survey results regarding the current knowledge of the participants and their approach to ensuring accessible course content before obtaining access to the training modules are worthy of

note. When asked about the participants' approach to the accessibility of digital course materials, 40.55% of participants indicate they (a) do not think about or prioritize accessibility, (b) only think about it if a student with a disability requires it, or (c) consider the accessibility of their course content, but do not know how to make it accessible. In comparison, 59.4% indicate they sometimes or often take steps to ensure course content is accessible by students with disabilities. Just over 40% of participants do not consider the accessibility of their course content valuable enough to think about it while they are creating the content, or they do not feel it necessary to learn how to remediate the content unless they are required to do so.

While the basic information about the participants' experiences with online teaching and integrating accessibility requirements in it can be obtained through several survey questions, it is important to consider the overall picture of the faculty engagement or lack thereof in understanding the requirements guiding the creation of accessible materials to individuals with disabilities, what support the university offers to faculty in this regard, and the perception of the faculty regarding the usefulness of the support provided in a professional development setting. Thus, the following emergent categories reflect the scope of these experiences.

### **Training: Required or Nonexistent?**

While preparing to launch the study, a careful review of available training opportunities, both mandatory and elective, reveals the absence of any formal faculty training the university offers regarding accessibility in general, or as it applies to course content for students with disabilities, accessibility, or teaching an online course. Submissions from the initial survey indicate some participants have participated in previous training opportunities, however.

Twenty-five (25) of the participants indicated they had attended an accessibility workshop at the institution one or more times. In contrast, 12 answered they have never or were



not sure if they have ever participated in this type of workshop. Of those attending a seminar of this nature, the mean score of the helpfulness of the training was 3.61, with one indicating “not helpful at all, and five indicating “very helpful.” These statistics reveal the training they perceived as having a focus on accessibility was moderately beneficial. Further, given the number of participants sharing past attendance of an accessibility workshop at the institution on one or more occasions, I begin to wonder if the training was offered through a department at the institution, or if the opportunity was offered during a conference or through another venue. The survey did not ask for this information.

### **Online Learning for Students with Disabilities: How Accessible Is It?**

The first survey in the study gauges the participants’ perceptions of how accessible their current courses are to all students, but in particular those individuals with various disabilities. The survey also reviews the group’s thoughts regarding the importance of varying methods of access to information and learning for all students, including those with disabilities. A discussion of the group’s answers follows.

#### ***Initial Perceptions of Existing Courses***

The mean score of the participants’ perception of their course content being accessible in the initial survey was 3.36 (with scores ranging from 1-5, with one being “not accessible at all” and five being “very accessible”). The mean score of the participants’ perception of the importance of accessible digital content is to the learning experiences of all students was 4.39, with a score of five representing “very important.” The difference between these two scores is thought-provoking. On average, a high number of participants believe accessible course content is essential to the learning experiences of all students. Still, a much lower number indicates a considerably lower level of confidence from the participants perceiving their current content as

accessible. And further, just over 40% do not find this type of access important enough to think about it while they are creating it, or to learn how to remediate the content, if they do not already know. To summarize, at the beginning of the study, a large part of the group believe access to the content and learning experiences are highly important, but they do not believe their current courses are very accessible.

### ***Access to Information and Learning***

Participants' responses also indicate they believe providing students with different ways of consuming content is vital to learning, with a mean score of 4.46, with five representing "very important." This information will provide additional thoughts to consider as the analysis of the participant feedback toward the end of the study continues; some faculty participating in the focus group did not see the benefits to students of the alternative formats of the materials provided through Ally.

Interestingly, also from the initial survey, some participants' responses include a wide range of feedback regarding the participants' initial thoughts concerning accessibility, and the lack of available training and resources. One shares, "[The institution] still lacks resources to make courses accessible. Instant closed captioning of videos is the item that comes to mind right away." This statement resonates with me as the Director of Student Disability Services, knowing the department provides some amount of funding to individuals who need this type of service. The department should increase the effectiveness of future communication about the availability of this resource while working with the Instructional Designers in the various academic colleges.

Other responses include:

Research in science education repeatedly demonstrates that multiple ways of teaching and assessing are important in helping all students learn no matter if they have a

disability or not. In other words, students learn in different ways, and I believe it is our job to make multiple ways of learning available. However, I am not convinced, and the evidence is sketchy whether online learning is doable for frosh who have limited experience in this area, self-efficacy issues, motivations, etcetera. Certain lab skills are not easily adaptable to multiple modes of assessment.

Another participant shares, “Offering content in the most accessible way possible is imperative for all students. These types of opportunities facilitate higher levels of understanding across all populations of students in the learning environment.” In general, the faculty are interested in providing the best content available to their students and are interested in their academic success.

All information above reveals the need for a formal training process. Training should inform faculty and staff about the necessity for and federal requirements of accessible courses and services. The material should include information about the resources available to ensure accessibility, and the support to train the employees on how to use the tools to review the accessibility of the services they provide, or the courses they teach.

### **Training: “If You Build It, They Will Come!”**

A review of existing training opportunities through eLearning reveals a number of opportunities covering a variety of topics available to the university community. The manager of eLearning is a wizard at “sprinkling the need for accessibility” throughout the various trainings she presents. She also includes Student Disability Services staff in meetings and training opportunities across campus. While reviewing past professional development opportunities and attending some sessions taking place during the study, I realize, in general, faculty members are eager to learn about topics specifically related to their end goal. If they can apply the information directly to the task at hand, they will voluntarily...and eagerly...participate in training. In many

of the training workshops eLearning offers, attendance averages around 50-70 attendees or more. These attendees register for the workshops at their convenience, and attendance is not mandatory. Working with the eLearning team to prepare the professional development opportunity for the study was essential.

### ***Self-Paced, Online Training Modules***

After the initial survey, participants were added to the training module in Blackboard, the university's learning management system (LMS), and notified by email about the next steps in the study. The objectives of the training were for the participants to understand the importance of making content accessible, even during a time of urgency to move online; create original Word documents and PowerPoints that include basic accessibility features; discuss various options for making PDFs more accessible. Finally, participants should be able to use automated checkers to support their efforts in making content accessible by the conclusion of the training. The modules include information about why accessibility is essential: learners are diverse, it is the law, and it is the "right thing to do." The training contains videos about the Web Content Accessibility Guidelines (WCAG) and the rules and regulations governing accessibility such as Section 508, which includes standards and guidelines for access from the United States Access Board (2017). A great deal of information is included in each module, teaching the participants how to use the resources and tools available to them to review their course content. Module topics include Utilizing Blackboard Ally, Microsoft Word Document Accessibility, PowerPoint Accessibility, PDF Accessibility, Video Accessibility, Resources, an Accessibility Awareness Quiz, and a Discussion Board.

The participants were allowed approximately two weeks to sift through the training sessions on their own and are asked to complete the quiz during this two-week timeframe. Based

on reports generated within the LMS, 11 of the participants never accessed the training. Of the other 23 who did open the training modules, 18 individuals opted to take the Accessibility Awareness Quiz to gauge their knowledge about accessibility in general. The mean score of these participants is 132.9 out of a possible 150 points. The lowest score was 100, and the highest score earned was 150. Participants had the option to complete the quiz at their leisure. They could take the test any time during the training, and as many times as they wanted. Two of the 18 elected to take the quiz a second time to raise their score. One score increased 20 points, and the other rose 40 points. The drive for these participants to take the quiz more than once reflects the same desire displayed by others as they use Ally in the next phase of the study to review and update their course content. During the time this study occurs, the participants are also preparing their courses for the upcoming summer semesters. Additional support of their efforts is provided in the next phase of the study when the instructors are scheduled to participate in a one-on-one accessibility support session.

### ***One-on-One Accessibility Support Sessions – One Step Further***

The second portion of the training involved the participants scheduling one-on-one accessibility support sessions with the researcher (also serving as the Director of Student Disability Services at the study institution) and the manager of the eLearning center. During this session, each participant received additional information and support about how to use Ally to review the professor's existing course content in preparing to teach one or more online courses during the summer terms. Figure 4 includes a snapshot of the session agenda.

## Figure 4

### *Snapshot of the One-on-One Accessibility Support Session Agenda*

#### **Using the Course Accessibility Report**

1. Find your course accessibility report. This link is located in the Course Tools.
2. Locate the **Content with the easiest issues to fix** pathway. Choose the **Start** button.
3. Select the Accessibility Indicator next to a file that you want to improve. Doing this will launch the Instructor Feedback.

#### **Ally**

- Red, yellow and green gauges the accessibility of your course content.
- Accessibility Score. Usually never 100%. Nobody sees it but you! Don't think of it as a grade!
- What is most valuable to you to remediate. We can help! You aren't in this alone!
- If you are recording videos, let us help you caption them: Kaltura Machine Captioning, or Rev.com

#### **Questions about your summer course content specifically?**

#### **Want to schedule time to visit more about your course?**

The itinerary includes information about the Course Accessibility Report, the Ally gauge for each content item, and how to use Ally to remediate content. Additional information was shared about the type of content Ally analyzes, what it will not review, and the resources available for faculty to use when recording and captioning videos. As the Director of Student Disability Services, I shared information about the new online system for tracking students receiving accommodations, information about the faculty portal, where faculty can log in and review at a glance the students with approved accommodations enrolled in their current classes, and how to view the faculty resources area located on the Student Disability Services website. Additional information was shared about the remainder of the study, the possibility of being invited to participate in a focus group, and the length of time the participants will retain access to the training session.

Of the 33 individuals included in the study, 21 scheduled an Accessibility Support Session. Surprisingly, this number consists of some participants who never accessed the self-

paced professional development and some who did not opt to take the quiz but did open the modules. All the participants logging into the training scheduled a one-on-one session, attended, and actively participated in the virtual meetings, asking clarifying questions that came to mind while learning how to use Ally to review their courses.

### **Using Ally to Review Course Content Accessibility**

A major focus in the one-on-one support sessions was on using Ally to review and remediate course content. Data regarding the tool were collected from both the second survey, and in the focus group interview. In general, the participants seemed to genuinely enjoy using the tool. An analysis of the data further supports this notion.

### ***Individual Responses Through Focus Group Interview***

Every participant in the focus group interview made comments about how much they enjoyed working with Ally. Words and phrases such as “love,” “like,” “very helpful,” “enjoyed,” “help,” “valuable,” and “fantastic” were shared, some on multiple occasions. One participant shared, “It is not just me who can benefit.” Another stated, Ally was “going to work great!”

Some frustrations associated with learning the new tool were also communicated. In some situations, Ally did not recognize the remediated content. In these cases, the study participants shared frustration about remediating content, reloading it into the course, and Ally still reflecting the remediated content as unchanged. Also, some participants experienced a lag of time between when they uploaded the new content and the updated accessibility score. These frustrations could be the result of an approximate 24-hour turnaround time it occasionally takes Ally to rescan the material and regenerate further instructor feedback, and to update the accessibility score; it also reflects the excitement of the users to obtain an update on the accessibility of their content. An interesting phenomenon is beginning to emerge. As the faculty

members learned how to use the tool and remediate the content, they could see the accessibility score for their content rise and they quickly became more excited and curious to know how the work they were doing affected the overall rating for their course.

Throughout the focus group interview, fascinating information was shared about the accessibility score Ally provides as part of the instructor feedback. Several of the participants shared words and phrases such as “not good enough. I like to get 100%” and “less was really irritating.” While another shared, “I finally decided 98% is good enough, so I moved on.” Overall, they seemed to like the metric. Several shared, “some areas were not as good as I thought.” Learning this information redirects my attention to the initial survey results when many participants indicated they perceived their course content to be reasonably accessible already. It appears as if Ally is providing practical and surprising information to these participants in the at-a-glance metric the instructors can use to gauge the accessibility of a document.

**Alternative Formats.** Feedback regarding alternative formats of materials being made available to students through using Ally presented mixed results. This topic seemed to have been glossed over in training. At this time, it is unclear about if the information in the modules was minimal, or if the participants skimmed over the information within the training. Many of the participants shared they did not know enough about this topic to make an informed decision. When asked about their perceptions on the subject, some indicated they were “not sure” about this topic. They realized that students with “different learning challenges,” and “different learning needs” could benefit. Other phrases shared along this same thought are “makes me wonder,” “I just don’t know,” and I “don’t understand,” “wasn’t too sure,” or “don’t know the usefulness.”



One instructor in the group was very excited about the availability of alternate formats tool and shared with the others how he planned to “leave them turned on.” He went on to explain to everyone that he is a teacher in special education, and he took the opportunity to educate the group about the idea of Universal Design for Learning, and why all students can benefit from this feature. He shared phrases to describe this area, such as “awesome deal,” “anybody can access,” and “great feature.” Before the discussion was over, he had convinced his colleagues of the benefits of alternative formats for text and materials, and there was a consensus they would all leave the tool turned on for the summer terms.

**Responses to Ally.** A comment was shared in the focus group interview from an individual who has begun to think of other useful ways to use Ally. He uses it to help recognize how much progress he has made with content remediation and accessibility:

I think it would be interesting to run my spring 2020 course through Ally and then compare it to the summer 2020 course in August. Then you would be able to measure the improvement that took place in my course from the semester without Ally to the semester with it. But as I upload content during the semester, you would need to wait until after the Summer to assess it.

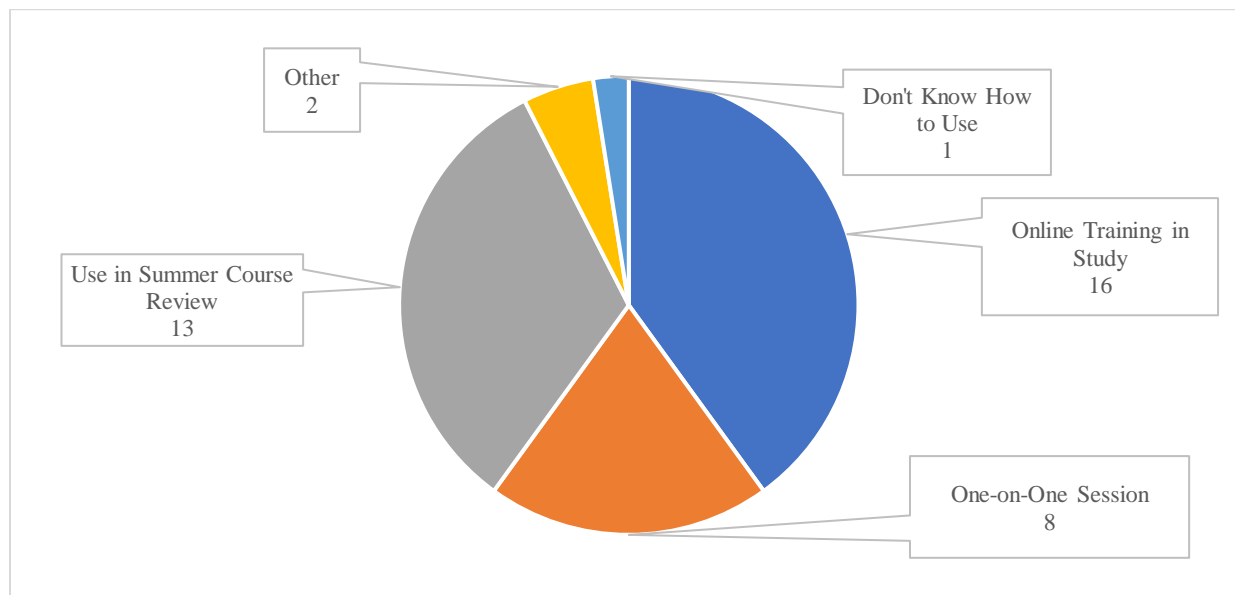
A final comment shared by one of the focus group participants also mirrors this thought. He requested that he be permitted to leave Ally “turned on” in his course for the fall. He believes this will give provide him with time to review, remediate, and reflect on the content he includes in his class.

### ***Responses to Ally Through Surveys***

The first question in the second survey asked participants how they initially heard about Ally. Of the 25 individuals responding, 10 heard about the tool from information shared in

faculty meetings, five learned about Ally in the accessibility training offered through the study, another four learned through the one-on-one sessions offered through the study. Seven participants learned about Ally from a colleague, and lastly, two heard about the tool from the instructional designer in their academic college, or at a conference. For this question, participants were asked to “click all that apply” therefore, some faculty selected more than one answer. Many of the participants learned about Ally by participating in the research study. The information the participants refer to they received in faculty meetings were provided in presentations many department chairs requested from eLearning and Student Disability Services at the beginning of each academic year. The university administration and the Ally Implementation Team has been working on a plan to launch Ally officially to the entire campus community at some point. The respondents’ answers to this question make me believe that while everyone is unable to use Ally at this point, initial information about the tool is beginning to get disseminated.

Again, asking participants to check all that apply, a question asked about how individuals in the study learned how to use Ally to review their courses. Answers reflect that 24 participants either learned how to utilize Ally directly through their involvement in the current research study, either through the online training, one-on-one accessibility support sessions, or both. This information, with additional responses, are included in Figure 5.

**Figure 5***Source of Ally Instruction*

An additional 13 respondents indicated they have played with the tool while preparing for and reviewing their courses for the summer terms. It is possible this also occurred due to participation in the study. However, there are a few individuals who gained access to the tool while working directly with their instructional designers outside of the study environment. The remaining responses for this question indicate one respondent still has no idea how to use Ally and another two individuals learned through working with their instructional designer, but named the specific individual, or through working with the Ally Implementation Team.

**Confidence Using Ally.** The next question in the survey asked about the confidence level of faculty when using Ally. Participants were asked to rate their confidence on a scale of one to five, with one reflecting “no confidence at all” and five representing “very confident.” The mean confidence level of the 23 faculty members responding was 3.78. While this average response is a considerably reliable indicator of reasonable confidence, I believe the average would have been even higher had the participants had more time to use the tool within the study period. Also,

some participants shared in the one-on-one session they plan to use the tool to review their courses, but they do not teach their class until the second summer term. Therefore, they have not begun the course review process quite yet. The minimum score for this question was two, and the maximum response was five.

**Alternative Formats.** When asked about the usefulness of Ally's ability to offer alternative formats to those students who need it, the faculty responded with answers ranging from one to five, with a mean score of 3.48. Information shared in the focus group helped me realize not all faculty were knowledgeable about or understood what alternate formats were useful for, or why students would need the information in an alternative form. After this information was shared with the participants in the focus group, they agreed this functionality would be beneficial to students for a variety of reasons.

**Importance of Accessible Digital Materials.** Along the same line of questioning, faculty were next asked about the importance of accessible digital content to the learning experience of students. The faculty responses again ranged from one to five. For this question, the mean raised to 4.46, reflecting the participants do believe full access to digital content by all students is directly connected to their overall learning experiences.

**Instructors Speak About Ally.** Regarding the Instructor Feedback accessed through Ally, by clicking the gauge indicator, I asked how the participants use this tool to review and remediate the course content. Five individuals shared they never clicked the Ally indicator to review the feedback. One person clicked the symbol to look at the accessibility score, but stopped there. Three individuals clicked the gauge to see the accessibility score and read the information about any issues but did not try to fix anything. However, 15 of the 24 respondents

clicked the indicator, read the information provided about any problems, and tried their best to fix the issues.

The same 23 individuals rated the Instructor Feedback tool within Ally. The mean score of these responses is 3, using a scale of one (not helpful at all) to five (very helpful). The minimum score provided for this question was two, and the maximum rating provided was five. Given the high number of participants previously reporting they do their best to remediate problem content, the lower average rating regarding the Instructor Feedback tool was surprising.

***Solving Accessibility Issues.*** Twenty-three (23) participants answered the question regarding how they proceed when they are unable to solve an accessibility issue with the Instructor Feedback tool. Six respondents indicated they then ignore the problem. Four individuals went back to the Accessibility Awareness training offered through this study to look for help and accessibility tutorials to aid in remediating the content. Six people replaced the file with a new one, six contacted support at the institution. Finally, one person reported they are always able to fix the issue using the Instructor Feedback tool.

***How Well Does Ally Work?*** Finally, given an opportunity to elaborate, some additional thoughts were submitted.

Other than lack of time to adequately explore all the features, I found Ally useful. For me, it was a bit overwhelming because this is my first truly online course. I was more worried about creating/organizing/assessing content than making it compatible. I recognize accessibility is very important, so I wanted to participate. I found myself going back to rehash old content, but it became somewhat of a burden due to the sheer volume of information (STEM). I decided ultimately upon consultation with my Dean that

moving forward, newly created documents/ images, etc. get priority with older documents being updated as time allows.

Another shared:

I need more time to work with it. I am not confident yet, but once I have more time to work with Ally, I have no doubt I can become proficient in the use of Ally. I am looking forward to using Ally and making the courses more accessible.

Once again, these thoughts represent knowledge of the importance of accessible content, and the desire to begin, and continue remediating the content after the study concludes. One individual even mentions thoughts of ensuring new content is accessible from the point of creation in the future.

Survey submissions also reflect some frustration with the tool. Participants were provided an opportunity to elaborate on any of the previous responses. Some of the entries shared include, “Alternative formats were awful. I probably need to announce to my summer students NOT to attempt to use them.” As many participants teaching in the areas of Science, Technology, Engineering, and Math (STEM) shared their frustration with how to remediate content without “giving away the answer,” I suspect a STEM instructor shared the statement. Another shared:

On contrast compliance for PowerPoint slides, in some cases, it looks good to me where I have fixed in the PowerPoint application, but still appears to overlap in the Ally view screen. Still have 98% compliance, but I prefer 100%.

This comment reflects the commitment of this participant to remediate all course content for which they are responsible.

Having just found out about this and being under pressure to get my courses online very quickly, I have not gone back and fixed the issues. Starting in a week or two, I will go

through all of my courses and try to correct issues to the best of my ability. I think it is great to have access to these with real help in trying to make this better.

Again, this statement reflects the participant now realizes the importance of accessibility and is willing to use the tools provided to remediate content as necessary. The remainder of the comments are equally as detailed and include:

Graphics/Image support is not as robust as I would have hoped. In the teaching/learning phase, providing descriptions to images is just fine, but for image intensive courses in STEM, assessment is particularly challenging. For example, to meet certain accessibility standards, you almost have to give away the answer to the question. If the course objective includes recognizing the various chambers of the heart and their relationships to other heart structures, I found that to get 100% on Ally required me to give away the answer. Recognizing structures is a feather of the course, so I remained challenged on how to assess the students. I'm not sure what the solution is here.

And the final two statements, "I really like using Ally. I believe it is a better support system for all student learners" and "The Blackboard training was very helpful with accessibility issues."

These thoughts further strengthen the analysis of information reflected in the first few comments above. Even with the frustration shared by some, Ally is clearly a "hit" with the participants of the study.

### **Professional Development: Does It Work?**

To determine if the training opportunity leaves a lasting and positive impression on the participants, it is necessary to first return to the initial survey. A comparison of the initial perceptions of the participants about the accessibility of their existing course content, and their thoughts regarding the training opportunity and the resulting accessibility score for their courses

after the training are enlightening. Statements from focus group participants about what could be added to the training or how it could be improved, reflect the group found value in the training modules. Submissions from the second survey reflect the same feeling.

### ***Initial Perceptions of Course Content and Accessibility***

The information the faculty share regarding their knowledge about and perceptions of accessibility, are a bit contradictory as compared to their initial willingness to spend the time to ensure their content is accessible. Originally, the faculty reflect their knowledge that they should provide accessible content when needed, but they did not necessarily know how to make the content accessible, nor were they willing to spend the time to do so if not required. I hope to find significantly different results in the analysis of data for the second survey and the interviews to come.

**Alternative Text for Images.** In the first survey, when asked about the use of adding alternative text (Alt-Text) to images the faculty use in their courses, only eight participants indicated they always add alt-text to their pictures or images. A more significant majority of the participants (28) shared they do not use alt-text because they (a) do not have any blind students, (b) do not know how, or (c) only sometimes add it because it is too much work to do so.

**Document Styles and Headings.** When asked about how the participants use document styles and headings in their classes, there was a more even split, with 47.2% of the group sharing they either are not aware, know what they are but do not believe they are useful, or are aware, but do not know how to use them. A bit larger percentage of the group, 52.8%, shared they know what headings are and use them in their documents. The group is fairly evenly split with regard to their knowledge in this area.



**Tagging PDF Documents.** When asked about tagging PDF documents, 50% of participants have never heard of tagging a PDF document. In comparison, 33% of participants have heard of it but do not know how to do it, and the remaining minority (17%) know what it means and ensure all PDFs they use are tagged. This information reflects that 83% of the participants use PDF documents but are not knowledgeable about how to make sure the materials are accessible. This idea is confirmed further in the second survey the participants submit later in the study.

**Videos and Closed-Captioning.** The participant group was also evenly divided in the initial survey when asked about captioning video recordings. Fifty percent indicated they: (a) are not aware they should use captions; (b) know what they are, but do not have time to add them; or (c) do not have time to add them. The other 50% either rely on YouTube auto-captioning or ensure their video content has accurate captions using another means. This information does not come as a surprise because, as the Director of Student Disability Services, I began the conversation on accessibility by talking to the campus community about the need to caption all video content approximately two years ago. In my opinion, the need for and requirement of captioning has been a long time coming and has been somewhat of a culture change and a change in the mindset for the faculty in the campus community.

**Comments From Initial Survey.** When provided an opportunity to elaborate more on their responses, several individuals submitted thoughts. “I try to add the tabs and closed captions with anything new. However, I have not necessarily had the time to go back and add to previous videos. Some of the older ones may just have transcripts.” Another shared:

While I do try to make sure my PDFs are compliant (Type A, if I am remembering without looking) unless the software is tagging them, I do not know how to do it. I rarely

use images by themselves in my courses. So, I marked I do not use them, but it was not because it was too much work. Blackboard makes this fairly easy. I have not had blind or deaf students in my courses. If I did, I would be much more conscientious about tagging, etcetera.

The last thought shared by this individual is one of the main reasons I initially considered this topic for my dissertation research. If the faculty considered making their content available in an accessible format of creation, it would eliminate the very reactive nature of the campus of assisting individuals with disabilities only when they request help. Doing so creates a last-minute effort, which is ripe with opportunity for mistakes and possibly poor results. It also impacts not only the faculty member, but the student needing the accommodation, and the other employees necessary to provide the support required to update the content.

A final three participants shared:

Bottom line for me is that most of these preceding items take WAY too much time in an already limited day. With the movement to online, we are so busy creating new content, that it's very stressful to even think about all the items you mentioned. More and more 'things' are being 'pushed' on faculty with little to no support.

Through the collaboration with our Office of Student Affairs, the Director of Student Disability Services works with our department to ensure we are up to date on the best practices for accessibility. We are always trying to make the best content available for any student who enrolls in our course.

And finally:

I do not know how to add captions. So, most of the videos or audio files I create are my own. I read from a script I've created and then post the script so students with auditory

impairments may read the script instead. Students with visual impairments can hear the video or audio file. If I have a deaf/blind student (which I have not encountered yet), I have no clue what I'll do!

Except for the first person, who seems wholly overwhelmed with the last-minute transition forced on the campus community due to the pandemic, these final statements reflect thoughts from individuals who are “doing the best they can” to provide accessible content. They know, minimally, where to call to ask for help and are providing a transcript of video content in some form, which is better than uploading a video with no captions or additional information included at all. Other participants shared, in general terms, they knew about some of the resources available or the need to caption videos but did not know if there was funding available to pay for this type of service.

### ***Perceptions After Professional Development***

Data about the participants' perception of their knowledge of accessibility in general, and their knowledge of how to create accessible material was collected using two methods. Immediately following the training opportunities, a focus group interview allows a smaller group of participants to share their thoughts. Lastly, the second survey requests the feedback of all participants in the study to share their thoughts and feedback on the topics.

In a focus group setting, interviewees share their thoughts about the training modules and their attitudes toward accessibility after training completion. While all considered the information to be essential and necessary, they all agreed there was a lot of information there to review and learn in the short time provided. While that was a prominent theme during the discussion regarding training, with words and phrases such as “overwhelming,” and “a lot of information” coming up repeatedly, additional information shared included how they enjoyed

“learning new information” also were included. Some believed the training shared “practical applications” and “great tools,” thought the “students would benefit,” enjoyed the “one-stop-shop” nature and “great tools” the training provided. One stated the modules “really did teach me!”

**Accessibility Revisited.** When discussing the participants’ knowledge and thoughts about accessibility, they all shared they know it is vital that students with disabilities are provided access to the information when they need it. Words and phrases shared during this portion of the interview included “great pains to ensure all classes are accessible,” “got hung up,” and “struggling.” All of these comments reflect fairly negative feelings about making content accessible. Even after participating in the training, all interviewees agreed while they are beginning to think about accessibility more as they create course content, it will take a while to learn how to make the content accessible. Even after the training, in general, the participants feel as though they would prefer to address the need for accessibility when it becomes “an issue” instead of having to “deal with it” when they are working to create course content. They believe it takes too much time.

**Alternative Text and Images.** The focus group discussion continued. When discussing alternative text (alt-text) for images, many participants teaching in Science, Technology, Engineering, or Math shared their concern about using alt-text for pictures in these fields. Going into the study, as the Director of Student Disability Services, I was aware this is a problematic area for our STEM faculty. The problem will not be resolved overnight, although many professionals in the realm of higher education are working diligently to address this concern. One participant concisely explained if alt-text is included when a picture is provided for a test

questions with an arrow pointing at a specific location on a bone or organ, I give away the answer if I include the alternative text for the image.

The word “struggle” was repeated on more than one occasion; most of this type of feedback was collected when conversing with professors in the STEM fields. As a researcher, I believe their frustration with alt-text and images mainly shapes the attitudes of STEM professors toward accessibility in general. Because of the significant impact of using alt-text to teach in the STEM fields, the remaining components of accessibility tend to get left behind in the minds of these participants. Individuals who teach in other academic fields used terms to describe this area of content remediation as “really simple.” One shared learning how to add alt-text to images taught him how to better “explain things simply.”

**Videos and Closed-Captioning.** The discussion then turned to closed-captioning videos. In general, participants shared words and phrases such as “give students a choice,” “very helpful,” and “amazing.” One participant indicated before the training, she “was overwhelmed, but now it is the “first thing I do, and further, “it feels like cheating.” In this response, she was telling the group about a new captioning software her academic college purchased to help their faculty with captioning videos. Another individual shared the words “pretty cool” to describe some of the resources he learned about while going through the training. All the participants seemed pretty comfortable and confident about captioning their videos and the need for doing so.

This attitude could result from the many messages being shared across the campus community regarding the need for captioning. Staff responsible for communication and marketing on behalf of the campus community will not post any videos about the university, or on the university website without captions included. Also, the streaming commencement exercises for the university are all captioned via remote transcription as the event is streamed

online, then is reviewed and corrected before being permanently included on the recorded version of the ceremony.

**Feedback After Professional Development.** As a conclusion to the second survey, participants were asked to share “any additional thoughts about the study,” they felt would be helpful moving forward. The following comments were shared about the availability of alternate formats. One instructor shared, “If alternate format links are available for students, it would be nice if the instructor could turn those off for certain assignments that do not convert well.”

Further supporting the discussion above, a section in the second survey asks participants to rank their confidence level with content remediation. The professors were asked how confident they were with several actions. The same scale (between one – “Not confident at all” and five – “Very confident”) was used. Table 1 below includes feedback with minimum and maximum responses, and finally, the mean score for each action.

**Table 1**

*Confidence Level With Content Remediation*

Action	Minimum	Maximum	Mean
Adding descriptions to your images.	2	5	4.04
Using headings and styles when authoring documents	2	5	4.13
Using accessible PowerPoint templates	2	5	3.68
Exporting a tagged PDF from Microsoft Word	2	5	3.45
Using Ally to download an OCR'd version of a scanned document	2	5	3

The majority of participants indicate they are quite comfortable with adding descriptions to their images and using headings and styles while creating documents in Microsoft Word. This increase in their confidence to add alternative text to images and use headings and styles can be attributed to the training modules. The group is somewhat comfortable creating accessible

PowerPoint presentations and exporting materials they have saved as a PDF back to Microsoft Word to remediate the content. All the scores above reflect a positive increase in the participants' knowledge about how to remediate and create accessible materials for their courses.

The group is not as comfortable using an optical character recognition (OCR) system to remediate scanned material. The majority of university employees rarely use optical character recognition and may not have access to such. It is in this area where some participants struggled while trying to remediate scanned pdf documents. An increase in the information on this topic can be beneficial in the future.

### ***Overall Experiences With the Training***

Both the focus group interview and the second survey provide an opportunity for participants to elaborate further with their thoughts. These thoughts provide further insight about the study, the training, and accessibility in general. What follows is a synopsis of the information shared by the participants from both forms of data collection.

Focusing on the participants' use of or access to the Accessibility Awareness training, participants were asked how many times they accessed the training modules in Blackboard. Eleven participants answered, "once or twice." Eight individuals answered, "3-5 times." Four people accessed the training more than five times, and one individual explained they knew about the training, but never accessed it. Provided the opportunity to share why the one individual did not open the training session, they shared, "I did not know I needed to."

Of the 24 participants submitting the final survey, 20 scheduled and participated in a one-on-one session to learn more about using Ally. All 20 of these participants indicate they found the meeting helpful. When asked if there is something that could be added to the one-on-one

session to increase the benefit, 14 did not think so, and six individuals answered yes, and shared their suggestions. The first participant stated:

I missed the part where students would be able to see the link to download optional formats. I thought it was just for instructors. After looking at what was produced as an optional format – I think that I would rather not let the students have access to that.

This statement made me realize there is an opportunity to provide additional information on the uses and reasons for alternate format text, both in books and in digital material. Another participant shared, “A follow-up session after I had “played” with Ally. More time to ask questions and a demonstration if we are having difficulty with a specific issue.” This statement indicates the instructor found the training and support offered to be beneficial and would like more assistance as they remediate their content. Additional time could be provided if this portion of the study lasted a bit longer. In the end, the training facilitators confirm the participants can call the eLearning staff or Student Disability Services in the future if they need assistance or if they have questions. A third person shared:

Need a FAQ section to answer the most common concerns. Perhaps provide more descriptive titles for the various modules. I appreciate that it was a one-stop-shopping environment, but I had to click around quite a bit to find what I needed. Clearer or more descriptive headings would be useful and more efficient. This statement also came up during the focus group interview, and all the participants agreed a “frequently asked questions” section would be beneficial to add to the training.

Another person shared:

It would be more useful to apply Ally to a course I previously taught so that specific observations and improvements could be made. Also, as there was only a short period



between Spring and Summer, I do not yet have my course completely organized and am still working with uploading content as I answer this survey. I do not think my performance is characteristic of how my course will end up.

As I visited with people and took the time to analyze the information, a theme emerges throughout the study period. Many participants either indicated they wanted more time to continue to work on their data, or shared they are very interested in using the tool but did not have time to remediate their course content before the summer term began. Finally, the last statement shared was, “Learning how to create subtitles for videos using Bb Collaborate.” Collaborate is a program housed within the Blackboard LMS, which allows users to host virtual meetings, or record a lecture to upload into their course modules. Information about Collaborate was shared in the one-on-one sessions as a resource to use. This tool is not new to the faculty, but the idea of using it to caption videos may be new to some.

The final two questions of the second survey concern the overall experiences during the study and if the participants would recommend the training to a colleague. Participants ranked their overall experience while participating in the study using a scale from 1(horrible) to 10 (extremely beneficial). The minimum score submitted was four, and the maximum was 10. The mean for this question was 8.08. Of the 24 participants, 17 indicated they would recommend the training to a colleague, and the remaining seven indicated “maybe.”

Other feedback and suggestions gathered about the content or format of the training modules include:

I think we might find more sessions beneficial. Perhaps even a time when we are able to work in a computer lab on campus, with IT present, to assist us in any issues...a group

session of sorts where we could assist each other as well. This is not a "one and done" type of session. We will need help and continual training.

Interestingly, when initially planning the study, the support sessions were to take place in a computer lab-type setting with all participants, and staff from both eLearning and Student Disability Services present to assist with content remediation. A second participant shared:

Training would be beneficial in a format that was presented in some type of "on-demand" format in which the sessions were very short and focused, rather than having a video about how to use all of the functions of a tool. Do brief 30-second or so sessions just so they are focused on one aspect. Then the faculty could go straight to the detail they needed without wasting time fast-forwarding to the needed point.

Lastly, on the topic of the training modules, "More assistance on PDFs that are not owned by the instructor would be great. That was where most of my issues were."

Regarding participation in the study, one participant relayed, "I really appreciated the opportunity to learn and grow from this study. It was immediately useful and had multiple practical applications across all my courses." Another individual shared, "This has been a great experience. Although I need more time to correct and add to the module content, it is more accessible, and that is what is important."

The focus group interview began as I asked for feedback regarding each person's experience and thoughts about participating in the study. Words and phrases shared included "cool," it feels good "knowing my content is accessible," "really enjoyed it," and "great opportunity" were communicated. None of the participants shared any negative thoughts or experiences regarding their participation in the study overall. The discussion flowed smoothly and progressed easily following the questions originally crafted.

The faculty must find the training beneficial. The last topic of the discussion during the focus group interview turned to a request for suggestions on how we might improve the training modules to benefit the participants better. All the instructors were candid with their responses and shared the following ideas. The faculty would like to see a Frequently Asked Questions Section. They believe this will help participants look at the main areas where people struggle, and they would hope to find material about some of the more common problems in this location. All of the participants in the focus group joked about how information should include “what you do when you can’t get your indicator to 100%!” Another professor requested that I “add a brief description for each module.” The final request submitted for consideration is to include a list of resources people can refer to if they need help with specific areas or if they need to submit a request for captioning or other resources. Another individual requested that we consider adding links “so we can click and go to a website or watch a short video.”

At the end of the interview, all the participants began to chat in general about accessibility. The conversation turned to everyone sharing details about individual strengths the participants have where they feel most comfortable providing support to their colleagues in various areas about accessibility. Some shared contact information, and asked others to continue to collaborate, and share news about how the semester progresses and ends in the new situation we all find ourselves in due to the pandemic. The interview ended approximately one hour after it began.

### **Summary of the Findings**

Using multiple methods of data collection not only ensures the triangulation of data, it also creates depth and richness of the data and further strengthens the review process and results. Requesting information from the participants about their perception of training both before and

at the conclusion of the study provides unmistakable data to prove the benefit of training the faculty about the need for accessible course content. Interviewing a smaller group representing all academic areas at the university to learn about their thoughts and experiences during participating in the research study provides further depth about the usefulness of the support and resources. Reviewing the institutional report which reflects the accessibility score for all classes offered during any given semester is additional unmistakable proof that the training, resources, and faculty support the faculty receive during the research study has a significant impact.

Overall, the study results clearly and unquestionably answer each of the research questions. The first question guiding the research asked how the faculty are trained in the area of coursework accessibility and the accessibility of course content for students with disabilities. A review of the existing training opportunities before the study began, resulted in the finding that the university does not offer specific training on the topic of accessibility for courses and course content for students with disabilities. The second research question asked about the faculty's perceptions regarding self-paced training on accessibility and online course design. The faculty participating in the training created for this research study perceived self-paced training on accessibility and online course design to be easily completed and a helpful form of training.

The third research question guiding the study asked what operating policies and procedures have been established by college programs to ensure online courses are accessible. While currently, there are not any operating policies and procedures established by the university or any one college program to ensure online courses are accessible, there is a draft of such currently in the works at the university. Members serving on the Ally Implementation Team, working in subgroups are adding the finishing touches to the final draft of an operating policy

guiding accessibility for the institution. This draft will soon be presented to campus administrators for approval.

Finally, the last question guiding the research asked about the impact professional development and training has on online course content. A comparison of the institutional report for accessibility of online courses from the beginning of the study and at the end reflects that professional development does positively impact the accessibility of online course content. Not only did the overall accessibility of online course content for the semester increase by 3.59% due solely to the efforts of the study participants remediating their course content, the extensive efforts of yet a smaller group within the sample population resulted in an overall increase in accessibility of 4.83% for all courses offered by the university during the summer term. Some of the participants planned to remediate their course content after the conclusion of the study, but before the beginning of the second summer term. It is possible that these percentages increased further after the conclusion of the study.

## Chapter 5: Discussion, Conclusions, and Reflections

As the United States continues to evolve into a more inclusive environment for all citizens, so too does the availability of new technology to help address how educational leaders approach the creation of accessible digital materials. The need to change the way leaders think about access in all environments continues to grow in importance. Access to facilities and services by all individuals is essential. As technology continues to improve and evolve in an era of cell phones, streaming movies, audio, and video recordings, the United States is more connected to digital content than ever before. Institutional leaders cannot afford NOT to consider digital accessibility, and how all individuals gain access to the digital content immediately upon creating the material. This consideration may not occur to those who can readily access the material and content without problems. However, it is the immediate attention to accessibility by those creating this content, which in many cases makes the process for persons with disabilities so seamless.

Some individuals will not be able to access services offered by the university without the attention to detail for accessibility. In cases such as these, the final ruling from the United States Access Board (2017) remains unaddressed. It leaves institutions susceptible to lawsuits, scrutiny by the Office of Civil Rights, and other adverse public attention. Many lawsuits exist where institutions of higher education offer inaccessible services or digital content (Higher Ed Accessibility Lawsuits, Complaints, and Settlements, 2020). The negative publicity can be crippling to any institution or organization.

The goal of this study was to increase the knowledge of accessibility and increase attention to detail when creating online courses for the faculty, staff, and administration at the study institution, bringing accessibility to the forefront by offering professional development to

professors. To create an increase in attention, a change in the culture of the campus community is necessary. In this regard, change theory can assist in guiding the institution forward while helping the university create a more inclusive culture (Kerber & Buono, 2018). Including formative and summative evaluation in the review of this study institution's current processes, procedures, and programs were essential. Evaluation research is a useful methodology with a pragmatic approach. Evaluation research methodology allows for a review of the current processes, programs, and existing training (Stufflebeam & Shinkfield, 2007) that the university as a site for this study offers. The results of this study are sound recommendations for change which the campus administrators might consider and could move the campus community forward and ever closer to an all-inclusive environment. Because this study's findings indicate there are no current operating policies or procedures in place to address the accessibility of the services and courses the institution provides, creating such could provide a significant start to ensuring online courses are accessible. Administrators could consider following the new policy with new training modules for each university employee to complete at specific intervals, also addressing the lack of training for the campus community as it applies to accessibility.

### **Best Practices in Online Education**

Prior to the beginning of this study, the review of best practices in the area of online education included information about how online education in America began and progressed to include the options currently available to students. This information was before the spread of COVID-19 and the resulting pandemic of which the United States is in the midst. Best practices are still evolving – now at a break-neck speed. Educators are working hard to move the courses online or to a hybrid environment at the minimum to meet the demands of students and to address the social distancing requirements guided by the Center for Disease Control and the

World Health Organization. Those professors teaching in a face-to-face environment find themselves video recording the lectures for their students who are divided into two groups to provide adequate social distancing and allowing the university to maintain enrollment. Operating in this manner turns the face-to-face class into a hybrid situation, including both face-to-face and online aspects to course requirements. Half of the class attends class in person while the other half accesses the class remotely for the initial class session of the week, then they switch positions for the second session. The accessibility of online course materials and digital content, in general, has never been so crucial. At the same time, the world works to find a “new normal,” and we as educators attempt to continue offering services to our customers as consistently as possible.

The creation of training and increased support to the faculty who find themselves in the middle of “figuring out” how to provide access to their students who are participating in class both face-to-face and from a distance, would ensure the professors are more knowledgeable and at the same time may feel less reactive to the new teaching environment the pandemic situation creates. Secondly, the perceptions of such support and training could be more appreciated than under the previous educational environment prior to the pandemic.

### **Accessibility of Online Course Content**

The standards in the Web Content Accessibility Guidelines 2.0 (Feingold, 2017) guide the accessibility of online course content. There are also standards guiding the process of designing instructional materials in the online environment. The Association for Educational Communications and Technology publishes standards guiding instructional designers and others in creating course content in the online environment (Martin et al., 2019). This guidance was



reviewed and followed when creating the professional development modules for the participants in this study.

Buzwell et al. (2016) suggested as early as the 21st century, online education would replace face-to-face course offerings. One cannot imagine the statement would be significant as it is currently. There is no doubt accessibility looks and feels different now than before the pandemic. Students who could manage their diagnosis without the assistance of academic accommodations are now applying for temporary accommodations to help them remain safe and healthy. For example, some students have a diagnosis which places them in a high-risk category for contracting COVID-19, when under normal circumstances, they could manage the condition on their own and attend classes as usual. Students who are immunocompromised are no longer able to physically attend class due to the high risk of becoming deathly ill. Students who are in quarantine awaiting COVID-19 test results, and those who may then move into isolation after receiving positive test results qualify for temporary accommodations while recovering from the virus and until being clear to return to campus.

Remote attendance seems to be the perfect accommodation for this situation. The creation of online and hybrid courses is making this accommodation possible while providing an easy transition for students who are also experiencing various stages of illness and are working hard to remain on track with their course requirements. All of these details force the faculty members to ensure their classes are immediately accessible, and these students can attend class remotely as an accommodation for what is hopefully a temporary condition. Unfortunately, the pandemic also creates a reactive environment, as discussed in previous chapters.

Federal laws dictate services and facilities must be accessible to all individuals, including those with disabilities. Adverse publicity, nationally publicized lawsuits, and repetitive review by

the Office of Civil Rights are some results many businesses and institutions of higher education experience as a result of offering inaccessible services and facilities. Removal of federal funding is yet another possibility. As far back as four years ago, the importance of accessibility was reiterated by the United States Access Board in their final ruling, which updates Section 508 of the Rehabilitation Act (United States Access Board, 2017).

During this study, in the initial survey, the participants reported their understanding of why their course content must be accessible at all times was mid-range, further supporting the research results of Moorefield-Lang et al. (2016). Still, their perception of the importance of accessible digital content positively affecting the learning experiences of all students ranks very high, supporting research findings from Walters et al. (2017). On average, a high number of participants believe that accessible course content is essential to the learning experiences of all students. Still, a lower number of participants perceive their current content as relatively inaccessible.

Moreover, further, just over 40% do not find this type of access important enough to think about it while they are creating it or have the drive to learn how to remediate the content if they do not already know how to do so. The instructors' perceptions regarding remediating their content after the study, in general, were not much better. This finding echoes what Moorefield-Lang et al. (2016) validated as the outcome and share how the resulting impact can include a very reactive environment, which also negatively impacts university funding and could necessitate significant time to remediate course content.

The analysis of artifacts in this study resulted in the identification of awards offered through Blackboard at their annual conference (BbWorld). In 2019, the eLearning Team at the university where this study takes place won the International Catalyst Award for Education

Technology. Several professors at the university where this study occurs received recognition just this year for individual submissions in some of the other Catalyst Award categories. This finding supports what researchers such as Baldwin et al. (2018), Chen et al. (2017), and Martin et al. (2019) stated about the many companies offering learning management systems who also offer rubrics to assist faculty with course building. These institutions recognize and award those who go above and beyond to create accessible materials for their classes. The individual instructors at the university where this study was conducted received recognition for the accessibility and extraordinary design, which provides seamless access to the materials and increased engagement for all students, including those with disabilities.

While the topic of accessibility is beginning to occur in conversations throughout higher education, in general, the need for administrators to stress the importance in all services the university offers to be accessible from the very beginning is necessary and essential to creating the needed change (Martin et al., 2019). Currently, most university administrators at the institution where this study was conducted are not focusing enough on the requirements of accessibility, and the possible adverse effects that could result from offering services unavailable to all individuals. The administrators could increase this focus across campus by offering professional development to all faculty and staff about the importance of accessible services, classes, and digital content overall. The conversation was beginning to emerge, and then the pandemic situation sent the university into yet another reactive environment in mid-March of 2020. In some ways, moving all courses on campus in the middle of the fall semester to the distance education environment forced the need and demand for accessibility on the university community. Still, the findings of this study indicate the thoughts of the faculty were on getting through the semester, not on offering accessible content. If students with disabilities do not enroll

in one particular course, the faculty member teaching that course may overlook the importance of accessibility, and not incorporate accessible content.

As this study progressed on the West Texas campus, opportunities for change leadership continually emerged. Throughout this study, individual situations and the perceptions about accessibility shared by the participants support the tenets of the theory of change that affirms leading the culture change for this campus community will take time, the addition of training and increased support, in an environment rich with teamwork and collegiality. Leadership theories have emerged from practice to assist administrators in making a change with positive results (Zambo, 2014). For instance, an increase in the motivation of the participants while working together to sift through and remediate course content reflects the use of transformational, empowering, and authentic leadership styles several researchers discuss in their scholarly work (Jiang & Men, 2017; Khan & Ismail, 2017; Otaghsara & Hamzehzadeh, 2017; Rahbi et al., 2017). Empowering leadership skills further allowed the study participants the freedom to access their training modules at their convenience, and as a review when they went back to reference material to walk them through content remediation specific to their situation while embracing their responsibility for course accessibility.

Ling et al. (2018) suggested that change theory can be impactful while leading others in a consistent and interrelated manner while providing a constructive atmosphere where all involved are working to reach one goal. This theory emerged more often than others as the study progressed. Offering opportunities for the campus community to work together toward a unified goal, considering access to all individuals in all services the institution offers, can reinforce the importance of and necessity for the change. This culture of change can be instrumental in creating an increase in access for all students enrolling in courses and interested in the services

and programs the university offers. Tying principles of the theory of change into the training and operating policies regarding accessibility of services will have a significant overall impact on the accessibility of all courses, but particularly in the online environment, further supporting the findings which answer the questions guiding this research study.

### **Professional Development**

A careful review of the current training opportunities available at the institution where this study was conducted reflects a lack of such, which supports findings by other researchers who also found a lack of employees at their study institution who are knowledgeable on the topic of accessibility (Caplan & Graham, 2008; Ceresnova et al., 2017). The unavailability of training on accessibility reflects a lack of attention to the importance of and requirements for such.

The professional development sessions intended for this study were offered in a self-paced, online environment for the instructors to work through over an approximate one-week period. The participants shared an appreciation for training in this type of environment in multiple conversations while working in the one-on-one sessions, further supporting research from Zhang and Liu (2019). Participants in other studies also reflect an appreciation for a self-paced training (Bostancioglu, 2018; Liu et al., 2016; Rizzuto, 2017; Teräs, 2016; Yarbrough, 2018). The findings of this study echo the findings of past research, well-trained faculty members and course content creators are best able to create high-quality courses (Chen et al., 2017). This notion begins with high-quality training offered in a manner that best suits the participants (Zhang & Lui, 2019). Training modules purposefully include essential information explaining the necessity of using Universal Design for Learning to review and remediate content (Al-Azawei et al., 2017). The modules also offer information from the International Board of Standards for Training, Performance, and Instruction (Bose, 2012), which guides the design

process for online course content. The modules were offered in a self-paced online environment allowing participants to access the information as often as needed and to further review areas that are most applicable to their specific needs.

Working together as an organization creates an environment rich with camaraderie, trust, and support, which can lead to positive results for all faculty, staff, and students (Choi, 2011). The findings of this study further validate the information from Choi (2011) about productive atmospheres and supportive working environments while all employees work together to reach one goal. All participants of this study were excited to learn about their colleagues' similar experiences while remediating content throughout various phases of the professional development opportunities provided to them. They shared this excitement in the focus group setting. The eagerness expressed and the responsibility they feel about content remediation further supports the findings of the study conducted by Olesova and Campbell (2019). Building collegiality among a larger group while empowering the participants to remediate their content also reflects the findings in a study by Martin et al. (2013). Researchers noticed a significant increase in the motivation of their participants while working together to reach the critical goal of increasing access to their content. Finally, the information shared by the participants in the focus group for the current study also supports this notion. Feedback from the participants reflects happiness and a sense of relief knowing the content of their courses is accessible moving forward, thus eliminating the worry about a possibly reactive situation if the need arises to provide accommodations for students immediately. Each of these findings further support the notion that self-paced training is perceived by faculty as useful and easy to complete. This type of training also results in a positive increase in the accessibility of online course content.

## **Recommendations for a Campus Community**

Accessibility of facilities and services is the responsibility of an entire campus community. While this study focuses on the accessibility of online course content, creating a culture of change will need to include all members of the campus community (Ally, 2008). Not only are the administrators of a campus responsible for accessibility, but the faculty, staff, and students also play an essential role in ensuring an environment inviting and readily accessible to all individuals. Changing a campus culture ought to include the efforts of all community members. Below is a plan for this West Texas campus to move toward a more accessible environment for all.

Utilizing aspects of the theory of change (Ling et al., 2018), campus administrators may consider supporting the creation of an operating policy guiding the campus community toward accessible services and facilities (Choi, 2011). The plan should include a breakdown of responsibilities by the employee category, a mandate for training on the topic (Alfes et al., 2019), and links to legislative requirements for institutions of higher education to provide access to all individuals, including those with disabilities. The culture of change would benefit from a “top-down” approach.

All institutions of higher learning, but particularly the university where this study unfolds, should hold faculty responsible for creating accessible materials for their courses. This responsibility includes materials included in both face-to-face and online content. Videos need to include captions not only when there is a student in the class with a hearing impairment or who is deaf, but at the moment the video is placed into the course. Images should always include alternative text. Fonts and colors in the online environment should be not only screen-reader friendly but also accessible to individuals with visual impairments such as color blindness. An

additional option might be to include content in a format where students with learning disabilities have the option to change the font to a dyslexia-friendly font, for example. Documents and other materials should include proper headings – not only boldface type and centered for the sighted students but formatted in a manner recognized by screen reading software. Other examples include accessible templates for PowerPoint presentations and the inclusion of tags in PDF documents.

The social interaction approach suggested in a study by Ling et al. (2018), supports the notion that staff members also play an essential role in guaranteeing accessibility. Some staff members are responsible for purchasing, and others for facilities, training, or faculty support. Ensuring the materials are accessible before submitting a purchase order is necessary. Employees in facilities management are responsible for ensuring proper access to all buildings and facilities on campus. Staff in student disability services, eLearning, and instructional design should play an active role in educating the campus community about the need for access. These groups might collaborate to offer training opportunities and workshops for faculty members, creating an inclusive and collegial environment. Training might also occur passively, educating the campus about resources available to review and ensure access for all individuals.

While university employees focus on providing students with access to all services, there is some responsibility on the part of the students. Students should not hesitate to inquire about and request services in a manner that fits their needs. If the material or services the university provides are not accessible, the student should ask questions about how to gain access to the content. Not able to see something on the website? Let a university employee know about the situation. When students apply for disability services on campus, the Student Disability Services staff talks to them about self-advocating. The student is responsible for visiting with someone



about their accommodation request, and later, to visit with their professors about their needs. If the student realizes they are still struggling, it is their responsibility to reach out to their professors or a staff member of Student Disability Services to ask for help. They are also responsible for taking advantage of the resources the university provides for all students to aid in their academic success.

### **Recommendations for Practice and Future Research**

While this study includes an extensive review of literature, still, a large amount of research does not exist specifically on the topic of accessible online course content. More research on this topic can be beneficial to provide additional guidance to institutions of higher education moving forward. This study uses evaluation research to review one university campus in West Texas, and it has proven an instrumental methodology for this study. However, future research could broaden the focus to include not only other methods of analysis but also other colleges and universities. The expansion of study might consist of not only institutions of the same type – 4-year, public institutions – but even community colleges and private institutions of higher education. Future researchers might consider comparing or contrasting institutions within a state or between various states. Interesting data might include information from educational institutions internationally. Finally, a quantitative study including a larger sample population could also provide valuable data to determine if professional development including the use of Ally actually caused the increase in accessibility scores overall.

### **Limitations of the Study**

While this evaluation research study is a thorough analysis of one West Texas institution's online course accessibility, it transpires during a pandemic. The unique environment in which the university finds itself during this time is not one a campus community ever predicts,

or for which usually prepares. The pandemic situation is an obvious but genuine limitation of the study.

The support provided in this study was to initially include a workshop for the participants where they work together in a group setting to review and remediate their course content. Because the university moved to work remotely just before the beginning of the study, virtual one-on-one sessions replaced this aspect of professional development. Offering this additional support may have provided slightly different results.

Finally, due to the pandemic situation, the faculty members were reeling from recently completing classes that were moved to the online environment halfway through the semester. They were also feeling immediate pressure to move classes typically taught face-to-face to a completely online environment beginning in the summer terms, which were to begin shortly after the conclusion of the fall semester. Surprisingly, the participants indicated they wanted a bit more time to review the content in the training modules. Had the study not occurred during a pandemic, the participants may have been able to provide greater focus and spend a bit more energy on the professional development opportunity and content remediation.

### **Final Reflections**

Prior to the study, training on the need for accessibility, what accessibility of course content involves, or even how to effectively teach an online course did not occur for most of the participants, yet all were teaching online while participating in the study. A review of existing training opportunities at the university reflected nothing exists to guide employees on the topic of accessibility. No university policies or procedures existed on the topic either. What does exist is plenty of opportunities for growth and improvement – one exciting result reflecting the appropriate selection of evaluation research to complete this study.

The study university is already moving in a positive direction by creating the Ally Implementation Team. The team is working on several important tasks which literature supports as essential to the theory of change. First, the group is creating an operating policy guiding all employees toward accessibility – including not only while reviewing course content, but also while purchasing goods and services, reviewing access to buildings on campus, and creating digital information included on the website. I am proud to serve as a member of this team and enjoy working with my colleagues to draft an operating policy that will eventually guide the campus community toward increased access for all students we serve. Choi (2011) found that creating operating policies and procedures to stress the details of and the importance of change further strengthens an initiative such as this.

While analyzing artifacts for this study, I realized how the university lacks any training opportunities on the topic of accessibility for the campus community. To address this situation, one subcommittee of the Ally Implementation Team is creating professional development opportunities for faculty and staff on the importance of accessibility. A separate subcommittee of the implementation team is creating a second training to teach the faculty how to use available resources to remediate and seamlessly prepare future content. Administrators should consider a requirement that these training sessions be completed by all faculty and staff on campus as appropriate and may elect to include them in an onboarding process as new employees begin working on campus. Alfes et al. (2019) suggested that involving Human Resources offices in Change Leadership may result in a higher level of acceptance for all employees regarding the change. Findings by Ling et al. (2018) also supported the thought that if administrators include social interactions as part of the change, the change can be more successful and build an environment producing an increase in self-efficacy and unity.

As a researcher, I was excited and proud to receive a phone call after the conclusion of my study requesting permission to use the training modules created specifically for this study to build on and guide the university forward. Administrators want to use the modules to train employees on the topic of accessibility. Learning this information and realizing that campus administrators at the study institution are thinking in this manner further defends my long-held belief that the training is necessary to move the campus community forward in a positive manner, and further validates for me, the urgency and importance of my research study.

Experiencing the enjoyment (and frustration) of the faculty members as they worked hard to improve the accessibility score of their documents and the overall course while utilizing Ally as a new resource is still exciting. This study provided the opportunity for the participants to use a tool before it is made available to the entire campus community. The participants are still talking about the experience after the conclusion of the study, and requesting they be allowed to use Ally in the fall semester. However, while the training resulted in an increase in knowledge about the need for and reasons accessibility must be guaranteed, it has not significantly changed the overall perceptions of the faculty about taking the time to initially design accessible online course content. In fact, reviewing the requests for Ally to remain turned on in certain courses, most of the requests came from individuals who participated more completely in each phase of the study. This information leads me to believe the more the faculty members know about accessibility and the reasons for it, the more inclined they will be to ensure their courses are accessible, and the more willing they are to review current courses to remediate the content as necessary.

Administrators at the study institution are interested in using the training modules created for this study to offer faculty moving forward. Already, while working with the eLearning staff,

and through services offered through the department I direct, we have begun collaborating to offer much of the content to the faculty on campus in an unofficial capacity. The two departments frequently work together to provide support and resources to anyone who requests the information. The availability of the training modules officially being made available will be announced to the campus community reasonably soon. The human resources department already mandates employees to complete specific training opportunities on an annual or bi-annual basis. Including training on accessibility and best practices regarding teaching in an online environment could yield positive results and further initiate the culture change for the campus community. The university may elect to continue stressing the importance of the topic by requiring employees to complete the training on an annual or bi-annual basis.

Finally, data supporting the desire for and benefit of providing professional development about accessibility requirements and the support to create such content is most clearly reflected in the numbers. A review of the Institutional Report, including the percentage of accessibility for all courses on campus, provides an unequivocal and encouraging message. A comparison of the accessible course content in classes included in the study during the first summer term of 2020, when the study takes place, to the courses offered during the first summer term a year before the study, yields astonishing results. Not all faculty teaching classes during study opted to participate and remediate content using Ally. However, the percentage of faculty who did choose to participate, review, and remediate their course content made an impressive impact on the institution's overall accessibility score. The commitment of 33 individuals to learn about the need for and requirements of accessibility and taking the time to learn how to review and remediate their content raised the institution's overall accessibility rating 4.6%. I am excited to see how much the overall accessibility percentage increases when many more faculty realize the

reasons behind the need for accessibility and the importance of providing such content not only to individuals with disabilities, but to all students, and begin remediating course content to increase access for all students.

In a world swiftly moving toward a digital environment, technology continues to advance and grow in importance. It is necessary to ensure that digital access for all individuals, including those with disabilities, is a guarantee. Technology also continues to advance in the number of programs, and types of equipment individuals with disabilities use to access online content. The environment for additional research on this topic is also ripe with possibilities. The more we know about the accessibility of services, online courses, and digital content at all institutions of higher education, the better prepared we are for a more inclusive campus.

The time has never been more appropriate to shine a spotlight on the accessibility of online course content. The study institution is making significant strides in moving toward providing an inclusive educational experience for all individuals, including those with disabilities, and I am excited that my research plays a small role in prompting the campus community to move in this direction. As a researcher and Director of Student Disability Services, I look forward to leading the department as we continue to play an active role in this effort in hopes that the results of my research study will assist the institution in moving ever closer to a completely accessible campus community for all.

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## Appendix A: Pretest Accessibility Awareness Survey for Faculty

This survey is designed to help us become a more accessible and inclusive campus. To better align our support and resources, I want to learn more about your accessibility experience and knowledge. I understand accessibility may be new to you. Responding honestly will help inform how to better support you.

This survey should take 5-10 minutes and includes 13 items. You can elaborate on your responses in the short-answer fields below. The survey consists of two parts: your teaching and accessibility experiences (9 questions), and your awareness of and practices with accessibility issues (4 questions).

1. In which academic college do you teach?
  - Programs in Health or Human Services
  - Programs in the Arts or Humanities
  - Education (both Public and Higher Education)
  - Programs in the areas of Business
  - Programs in the areas of Science or Engineering
  
2. How long have you been teaching at the college level?
  - 0-2 years
  - 3-5 years
  - 6-10 years
  - 11-20 years
  - 20+ years
  
3. How do you approach the accessibility of your digital course materials?
  - I don't think much about or prioritize the accessibility of my course materials
  - I only think about accessibility when I'm made aware of a student with disabilities in my course
  - I consider potential accessibility issues, but don't know where to start
  - I sometimes take steps to make sure my digital materials are more accessible
  - I review my course content often for accessibility issues
  
4. How accessible would you consider your digital course materials to be?
 

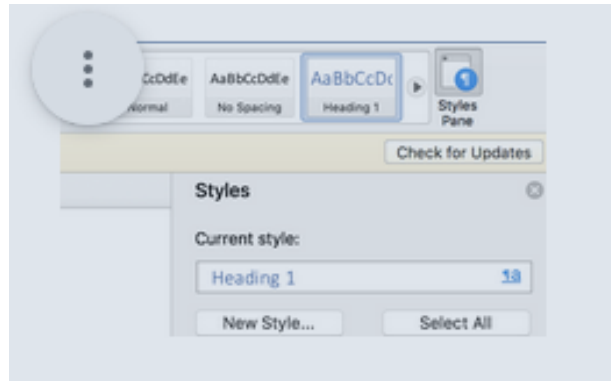


Not accessible at all Very Accessible
  
5. Have you ever attended an accessibility workshop or received accessibility training at your institution?
  - Never
  - Once
  - More than once
  - I'm not sure

6. How helpful was the workshop or training? (Leave blank if never attended)
- ● ● ● ●
- Not helpful at all Very helpful
7. Have you ever modified or changed your course materials to make them more accessible?
- No, this isn't part of my job.
  - No, I don't know how to make materials more accessible.
  - Yes, for a student with a disclosed disability.
  - Yes, to improve the usability of a file.
8. How important do you think accessible digital content is to the learning experiences of all your students?
- ● ● ● ●
- Not important at all Very important
9. Do you feel providing students with different ways of consuming content (like listening to a text or accessing a mobile-friendly version) is important for their learning?
- ● ● ● ●
- Not important at all Very important
10. Elaborate on any of your responses above.

Accessibility Issues: The four items below cover specific accessibility issues. For each item, select the response that best expresses how you approach that issue.

11. Alternative descriptions (alt-text) describe the content of a digital image, which can be read by screen readers. How do you use alt-text in your course?
- I don't add alt-text to my images because I don't have any blind students.
  - I don't add them to my images because I don't know how.
  - I only sometimes add them to my images because it's too much work.
  - I always add alt-text to my images.
  - I don't use images.
12. Styles and headings are tools to help you organize text in documents. How do you use headings in your documents?



- I wasn't aware about using headings when authoring documents.
  - I know what headings are, but don't think they are useful.
  - I know what headings are, but don't know how to use them.
  - I know what headings are, and use them in my documents.
  - I don't create documents.
13. Tagging PDF's provide documents structure. How do you use PDFs in your course?
- I haven't heard of tagging a PDF.
  - I've heard of tags, but don't know how they work.
  - I know what tagging a PDF means, and ensure my PDFs are tagged.
  - I don't use PDFs.
14. Captions provide on-screen text to help viewers follow the audio in a video. How do you add captions to your course videos?
- I wasn't aware I should be adding captions to videos.
  - I know what captions are, but don't have time to add them.
  - I know what captions are, but don't know how to add them.
  - I rely on YouTube auto-captions for my videos.
  - I make sure my video content has accurate captions.
  - I don't use video in my courses.
15. Elaborate on any of your responses above.

## Appendix B: Posttest Accessibility Awareness Survey for Faculty

This survey is designed to help us become a more accessible and inclusive campus. To better align our support and resources, we want to learn more about your accessibility experience and knowledge. We understand accessibility may still be new to you. Responding honestly will help inform how our team can better support you.

This survey should take 5-10 minutes and includes 14 items. You can elaborate on your responses in the short-answer fields below. The survey consists of two parts: Your awareness and usage of Ally (9 questions), and your usage of Ally to address specific accessibility issues (5 questions).

1. How did you find out about Ally? (check all that apply)
 

<input type="radio"/> Announcement on LMS front-page <input type="radio"/> Email blast <input type="radio"/> Workshop or training	<input type="radio"/> Department Chair <input type="radio"/> Colleague or student <input type="radio"/> Other
---	---
  
2. How did you learn to use Ally?
 

<input type="radio"/> I still don't know how to use Ally. <input type="radio"/> Playing with it in my course. <input type="radio"/> Through online help materials.	<input type="radio"/> Through a workshop or training. <input type="radio"/> Other
--	--
  
3. How confident do you feel using Ally in your courses?
 

●

●

●

●

●

Not confident at all
Very Confident
  
4. How useful are Ally's "Alternative Formats" to your students' learning?
 

●

●

●

●

●

Not useful at all
Very Useful
  
5. How important do you think accessible digital content is to the learning experiences of all your students?
 

●

●

●

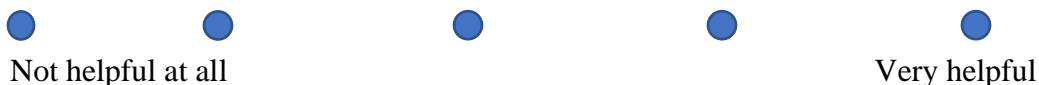
●

●

Not important at all
Very important
  
6. How do you use the Instructor Feedback once you've clicked an indicator?
  - I've never clicked an Ally indicator.
  - I check out the issue and score, but stop there.
  - I read the Ally info about the issue, but don't try to fix it.
  - I read the feedback and try my best to fix the issue.

7. If you can't figure out how to solve an accessibility issue with the Instructor Feedback, what would you do next?
- Ignore the issue.
  - Look online for accessibility tutorials.
  - Replace the file with a new one.
  - Contact support at my institution.
  - I'm always able to fix the issue.

8. How would you rate the Instructor Feedback for fixing accessibility issues?



9. Elaborate on any of your responses above.

Accessibility Issues: The five items below cover specific accessibility issues. How confident do you feel using Ally to fix these issues? If you've never encountered an issue, leave the survey item blank.

10. Adding descriptions (alt text) to your images:



11. Using headings and styles when authoring documents:



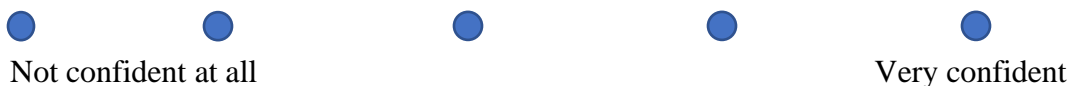
12. Using accessible PowerPoint templates:



13. Exporting a Tagged PDF from Word



14. Using Ally to download an OCRred version of a scanned document?



15. Elaborate on any of your responses above.

16. Did you participate in the one-on-one work session with Student Disability Services and eLearning? If so, to what extent did you find the session beneficial?



Not beneficial at all



Beneficial



Very beneficial

## Appendix C: IRB Approval Letter

**ABILENE CHRISTIAN UNIVERSITY**  
*Educating Students for Christian Service and Leadership Throughout the World*

Office of Research and Sponsored Programs  
320 Hardin Administration Building, ACU Box 29103, Abilene, Texas 79699-9103  
325-674-2885



April 9, 2020

Dallas A. Swafford

Department of  
Organizational Leadership  
Abilene Christian University

Dear Dallas,

On behalf of the Institutional Review Board, I am pleased to inform you that your project titled "An Evaluation of the Impact of Faculty Professional Development on Accessibility to Online Courses by Students with Special Needs at a Regional Four-Year Public Institution of Higher Education in West Texas", (IRB# 20-031 ) is exempt from review under Federal Policy for the Protection of Human Subjects.

If at any time the details of this project change, please resubmit to the IRB so the committee can determine whether or not the exempt status is still applicable.

I wish you well with your work.

Sincerely,

*Megan Roth*

Megan Roth, Ph.D.  
Director of Research and Sponsored Programs