FACULTY EXPERIENCES IN TEACHING STUDENTS WITH VISUAL IMPAIRMENTS IN HIGHER EDUCATION ONLINE LANGUAGE COURSES

by

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An applied dissertation submitted to the faculty of
The University of North Carolina at Charlotte
in partial fulfillment of the requirements
for the degree of Doctor of Education in
Educational Leadership

Charlotte

2023

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ABSTRACT

LIANE SHE. Faculty Experiences in Teaching Students with Visual Impairments in Higher Education Online Language Courses.
(Under the direction of DR. FLORENCE MARTIN)

In higher education institutions, as the number of online language courses continues to increase, it is paramount to provide training and support for faculty and equip them with the appropriate tools to improve students' learning experiences, specifically those with visual impairments. As such, the Culturally Relevant Disability Pedagogy and the Disability Studies Theory for College Students with Disabilities were utilized to help advocate for underrepresented students, and for them to receive adequate educational course contents. This qualitative study aims to examine online language faculty's experiences teaching students with vision impairments. The goal is to make a novel contribution by exploring accessibility issues for online accessibility in language courses in the United States. Ten in-depth, semi-structured interviews were conducted with 10 language faculty around the country. After analyzing each transcript, several themes were identified to answer each research question: 1) Faculty Experiences in Delivering Online Language Courses to Learners with Visual Impairments, 2) Training and Support in Delivering Accessible Online Language Courses, and 3) Strategies and Tools to Teach Students with Vision Impairments. These findings revealed that ADA compliance and online languages should be prioritized in higher education. Despite the increasing number of online courses to teach languages, it is salient that students with visual impairments require further support and attention in higher education. Additionally, faculty require further training and support to help them implement accessibility strategies and tools in their online courses.

ACKNOWLEDGEMENTS

My mother Marina and my father Heng Yu, for always encouraging me, pushing me to fulfill my goals and helping me see that I am capable of everything I set my mind to.

My “little” brother Louis, who inspires me by being the best example of dedication, strength, and discipline and is always here for me.

Lucius and Lilou, my two furry babies and main emotional support who have been way more than just lap kitties.

My aunt Katherine, who always inspired me as an educator and believed in me and my worth.

My great-uncle Georges and his wife Bernadette, who want a printed copy of my published dissertation since day one.

My entire family, who kept believing in me and motivated me to never give up.

Dr. Florence Martin, for her unconditional support in different areas of my life, determination and expertise. Thanks to her, I learned and am continuously learning more than I ever imagined and grew considerably in many ways, as a researcher, a woman, and an aspiring educator.

Dr. Ayesha Sadaf, for her reassuring smile, continuous support, and constructive criticism, and for having been a wonderful advisor who always helped me when unexpected situations arose.

Dr. Jae Hoon Lim, for sharing her incredible knowledge and constantly forging me as a qualitative researcher.

Dr. Concepción B. Godev, who always and continuously provided her support and fostered my passion for language teaching and learning since I first arrived in the United States.

Dr. Bobby Hobgood, for inspiring me ever since I started my application for this Ed.D. and for being my reference, as well as the first professional I knew who earned an Ed.D., and for constantly encouraging and motivating me in every possible language.

Both of my LDT and Higher Education cohorts, for all the writing sessions and also social times that helped us motivate each other to finish strong.

Dr. Alejandro Lee, who is not only an incredible educator and a well of knowledge but also a supporting colleague and friend who supported me immensely during the participant recruiting process for the present study.

Dr. Cindy Dean, my dear colleague who also earned an Ed.D. and offered me to come to her office and vent anytime I needed to (but I was always afraid of bugging her).

My true friends around the world: Emmy, Magali, Somaya, Aurélie, Karoline, Renaud, Alexandre, Sayde, Kimberly, Megan, Leigh, William, Raphaël, Nicolas, Léonore, Iliana, Paula, Lilian, Janine, Benjamin, Tiphaine, Romain, Paola, Andrea, Antonela, Elise, Lucie, Kelly, Tiffany, and others who heard me vent, brag, cry, celebrate at a close distance or from afar, and made me promise it was the last degree I would ever get.

Everyone at the North Carolina Brazilian Arts Project, who introduced me to a beautiful community, and offered me a space to exercise, express myself, and reset through the arts of samba and capoeira.

And last but certainly not least, the presence of my Lord and Savior in my life, as I am nothing without His presence in all my moments of strength and weakness.

DEDICATION

As I was trying to find my topic and my area of interest since the day I started this doctoral journey, there was one special person who truly accompanied me throughout the entire process, supported me, and listened to my never-ending monologues regarding the topic I wanted to focus on, how and why. Before I met this man, my world was black and white in one particular aspect. I thought that in the world, there were two types of people: the ones who genuinely help and assist others, and those receiving and, at times, even taking advantage of unconditional generosity. I always found myself to be in the first category, which was perfectly fine with me. Then, here he was, showing me that I, too, was allowed to be helped and assisted; that I, too, was able to rely on someone else when I needed it the most; that I, too, was allowed to share my milestones and be celebrated; and that I, too, had the right to have a shoulder to cry on if I felt led to do so. Since that very moment of realization, my world has shifted completely. He was, and still is, my constant support and guidance. He is endlessly listening to my ideas, even suggesting others, fostering conversations. Although in a different field of study (aviation), he even identified resources and people for me to contact in Brazil, his home country. He provides me with constant reassurance and strength. He shows unconditional grace and love when I feel like an imposter. He gives me more support than I could ever receive. He is my confidant. He is part of me. My peace, ma force tranquille. And he makes me see that everything is possible. One can say that “things happen for a reason”, but I truly believe people appear in our lives for a reason, as well. He was put in my path at the right time, and he proved to me countless times that I was and am loved unconditionally. There are no strong enough words to express my gratitude and my eternal love for him and the person that he is. Sim, Eduardo, esta pessoa incrível é você, meu sangue. Je t’aime infiniment.

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CHAPTER 1: INTRODUCTION

Since the United Nations Educational, Scientific and Cultural Organization (UNESCO) *World Conference on Special Educational Need* took place in Salamanca, Spain, in June 1994, the need for accessibility for students with disabilities has been defined as a concerning issue all around the world (de Mello Motta, 2004). According to the World Health Organization (2022), over 2.2 billion people around the world are considered to have a visual impairment. This means that about one-seventh of the population are in need of further accommodation in their everyday life.

According to the U.S. Department of Education's National Center for Education Statistics (2021), 19.4% of undergraduate students and 11.9% of graduate students reported having a disability. In higher education institutions, accessibility is a topic that is often overlooked in online instruction, especially if faculty do not have access to training on how to make their online courses accessible (Liakou & Manousou, 2017). For instance, in higher education institutions, training may be provided by a university's Office of Disability Services or equivalent, as well as by instructional designers. Students with visual impairments are especially at risk of not being equipped with the necessary tools or technology to access online courses (Heilig, 2018; Pittman & Heiselt, 2014; Wattenberg, 2004). Additionally, faculty may not be knowledgeable on how to create accessible resources for this student group (Hong et al., 2017; Malinovska & Ludikova, 2017). Furthermore, due to the prevalence of online courses after the COVID-19 pandemic, which forced most higher education institutions to rapidly shift from an in-person or hybrid setting to a fully online learning environment, there is a necessity to shed further light on accessibility to courses delivered online.

Koulikourdi (2009) noted that, overall, learners with visual impairments prefer to study humanities as opposed to STEM fields because the latter appear to be less accessible to them. As far as language courses are concerned, there has been a need to improve the quality of online language courses in the past decade (Cardenas & Inga, 2021). As Orsini-Jones (2009) showed, language courses are indispensable for higher education students regardless of their majors. Therefore, the opportunity to use instructional technology tools in online language courses will ensure success for these students.

As instructional technologies and distance education become more popular in higher education, online language learning allows students to study remotely and with flexibility. The ability to develop fluency in a language such as Spanish may afford more gainful employment opportunities (Blake & Delforge, 2004; Enkin & Mejias-Bikandi, 2017). However, despite the increasing number of online courses to teach languages such as Spanish, a need exists to further support students with visual impairments in higher education language courses through appropriate use of the available technologies (Blake & Delforge, 2004; Orsini-Jones, 2009). A gap in the literature on online language course accessibility was identified, as studies focusing on students with vision impairments in an online language course were not yet conducted. Therefore, this dissertation aims to examine online language faculty members' experiences teaching students with visual impairments and to describe strategies regarding the implementation of online accessibility. As such, it will make a novel contribution by exploring accessibility issues for students with visual impairment in any online language courses in the United States. Oral communication is paramount for these students as they are able to develop their speaking and listening proficiency further. However, they should also have access to accessible reading and writing tools to fulfill the language learning outcomes, according to the

American Council on the Teaching of Foreign Languages (ACTFL) proficiency guidelines (ACTFL, 2012). Therefore, language courses are the perfect venue to begin perfecting accommodations for visually impaired students.

Problem Statement

Considering that accessibility is a legal requirement for both in-person and online courses at any educational institution, awareness should be raised at higher education institutions and among faculty regarding the fulfillment of these laws and guidelines (Lowenthal et al., 2020). Currently, institutions often fail to explore the full range of available accessibility tools and software, such as the use of screen readers (Case & Davidson, 2011), Computer-Assisted Language Learning (CALL) technologies (Jin et al., 2021), and other audiovisual components and tools (Vines et al., 2019). Particularly in higher education institutions, the lack of accessible course materials, and institutional materials remain a major issue (Cardenas & Inga, 2021; Kurt, 2019). Nonetheless, several strategies and tools could be implemented by instructors in their courses, as resources already exist. As online courses and distance education become more prevalent, institutions would benefit from combining pedagogical and technological efforts to implement accessibility for students with disabilities across the United States (Reyes et al., 2021).

As Lamichhane (2017) stated, students with disabilities are to receive fully accessible education, per the UNESCO conference on accessibility in June 1994. Students with disabilities, and particularly students with vision impairments, remain underrepresented in educational institutions due to the lack of accessibility support they receive (Lamichhane, 2017). Despite the existence of laws that require accessibility for all individuals, discrepancies between the existence and the application of these laws remain.

As it relates to students with vision impairments taking foreign language courses, several studies were published regarding *in-person* language course accessibility in different educational settings. For instance, in K-12, Sofia (2016) noted that students with visual impairments are able to learn a language through the development of listening and speaking. In addition, Kapperman and Sticken (2003) stated that in higher education, tools, such as the Braille Lite note-taking tool, may allow students with visual impairments to study foreign languages without having to request the assistance of another individual. For instance, if their foreign language instructor was unable to read Braille, Braille Lite would allow students to transcribe the instructor's notes into Braille (Kapperman & Sticken, 2003). Therefore, such a tool would help build a bridge between language learning and students with visual impairments (Kapperman & Sticken, 2003).

Although several studies were found on visually impaired students learning a foreign language, they were found outside of the United States and the instructional setting was physical classrooms. Strategies, such as printing Braille signs and accessible classrooms are detailed in these studies; however, Sofia (2016) found that both students and their families do not receive enough support from their institutions. As such, online language courses for students with visual impairments is a field that requires further exploration (Eikel-Pohen, 2019). According to Eikel-Pohen's (2019) study, it was noted that many institutions do not seek to implement accessible practices into their language courses and instead, dissuade visually impaired students from taking a language course.

Despite the existence of accessible visual impairment tools such as the JAWS screen reader for PC computers and VoiceOver for Mac computers, other inclusive practices may be implemented to enhance online language learning (Eikel-Pohen, 2019). For instance, results showed that, online language learning courses do not implement the use of the tactile sense,

which could be done by integrating touch-enabled features on smartphones to teach cultural aspects of the language. Braille video transcripts may also be utilized to ensure inclusion and accessibility in visually impaired student learning environments (Eikel-Pohen, 2019). Cardenas and Inga (2021) revealed in their studies that, online language learning may be improved by the use of Braille, as well as audio transcripts, as the use of these technologies would develop students' haptic senses, like touch and hearing, to activate new communication skills.

Malinovska and Ludikova (2017) also found that, when students with visual impairments learn a foreign language, faculty still lack support and training to adequately accommodate them. This comes as a great opportunity loss to the students, since learning a foreign language would allow individuals with a visual impairment, as it does all other students, to have access to further professional and global opportunities. Nonetheless, the constant evolution of technologies, such as CALL and mobile assisted language learning (MALL) tools, may help assist adult language learners with a visual impairment (Malinovska & Ludikova, 2017).

As this dissertation purports to examine online language faculty experiences with students with visual impairments, the experiences of participating online faculty teaching these students will aim to contribute to their support. Lamichhane (2017) revealed that, when teachers are provided with the appropriate tools and skills to teach students with visual impairments, students feel more included in their courses. In order to create this supportive environment, faculty need continuous support from their institution to implement accessible materials; for instance, training on using the Universal Design for Learning (UDL) principles (Harrison, 2006).

As it relates to teaching students with visual impairments virtually, this dissertation centers on the importance of online language learning. As Blake and Delforge (2004), and later, Malinovska and Ludikova (2017), highlighted, the importance and growth of online language

courses cannot be overstated. Both studies found that learning a language will help all visually impaired individuals to become further involved in society as well as access equal and global opportunities (Sofia, 2016). Additionally, as CALL tools became indispensable to learn a foreign language, technologies play a paramount role for visually impaired students who wish to learn a foreign language (Malinovska & Ludikova, 2017). With the increase of online language courses and mobile applications such as Duolingo, examining how online language courses can be accessible for all individuals is crucial (Eikel-Pohen, 2019). Particularly after the COVID-19 pandemic forced higher education institutions to shift the course delivery from in-person to fully online, the necessity to address inequity in an online setting should be a priority for higher education institutions (Lowenthal et al., 2020). Therefore, this dissertation intends to serve as a bridge to examine and address the urgent need of equity in accessibility, particularly for students with vision impairments in an online learning environment, focusing particularly on higher education institutions of the United States.

Research Questions

The research questions addressed in this study are the following:

RQ$_1$: What are faculty experiences in delivering online language courses to students with visual impairments?

RQ$_2$: How do faculty describe the support and training they receive in delivering accessible online language courses?

RQ$_3$: What are the strategies and tools faculty use when teaching languages to students with visual impairments online?

Theoretical Framework Overview

Disability Studies Theory for College Students with Disabilities

As previously indicated in the introduction, a growing population of students with disabilities are attending higher education institutions in the United States (Hadley, 2011; Wynants & Dennis, 2017). Individuals with disabilities in the United States are protected by Section 504 of the Rehabilitation Act of 1973 and the American with Disabilities Act (ADA) of 1990. These documents state that, upon request, all students should receive accommodations and accessible services from their institutions (Hadley, 2011). Without accommodations and support, Hadley (2011) found that, individual development may be challenging.

Disability studies in education includes advocating for equity and inclusion in educational institutions for students with disabilities (Bacon & Baglieri, 2021). In addition, Critical Disability Theory, in particular, is used as a framework to identify societal elements that need to be examined in order to change culture and practices (Gillies, 2014). In fact, this framework aims to allow students to have equal opportunities to learn, interact, collaborate, and succeed in their courses. As such, it is paramount for higher education institutions to consider disability as part of an individual's identity, as opposed to the medical perspective of seeing it as an impairment (Cory et al., 2010).

Disability theory is looking to offer a more positive perception of disability and to empower people (Gillies, 2014). The societal perspective of disability as an illness or a handicap impacts individuals who may therefore feel excluded from some opportunities (Gillies, 2014). Instead, Gillies (2014) suggests a transformation of the negative vision to offer an array of equal opportunities in social, economic, political, and cultural areas.

Disability studies theory will advocate for students with disabilities who feel underrepresented, unseen, or otherwise marginalized. Higher education institutions should strive to create and repurpose a learning environment that would allow students with disabilities to

access it seamlessly (Bacon & Baglieri, 2021). Further action is needed to account for the importance of accommodations for these students. Therefore, disability theory provides a framework that contextualizes disabilities and gives a more positive social view to advocate for further inclusion of learners with disabilities. Otherwise, negative perceptions of disabilities may lead to racism and discrimination against these people (Anastasiou & Kaufman, 2011).

As it relates to students with vision impairment, disability theory posits that, when course content is available, higher education institutions must offer alternative formats to account for students with visual impairments (Lewin-Jones & Hodgson, 2004). Using this framework will offer guidelines for higher education institutions and their faculty to allow access to students with visual impairments in different learning environments, including online settings (Cardenas & Inga, 2021). Eikel-Pohen (2019) particularly focused on students with visual impairments in foreign language courses. This study showed that addressing the lack of this student group integration in those courses required further studies and practices to be put in place. Similarly, Cardenas and Inga (2021) also affirmed that, when higher education institutions are ready to train language faculty in offering accessibility in their courses, students with visual impairments will feel included and motivated to successfully learn and improve their language skills.

Culturally Relevant Disability Pedagogy Framework

To address the lack of accessible resources for students with disabilities, another theoretical framework that can be taken into consideration is the Culturally Relevant Disability Pedagogy (CRDP), recommended by Yuknis and Bernstein (2017). The CRDP aims to acknowledge individuals with disability and ensure that educational strategies are put in place by faculty so all students can be successful. Ladson-Billings first mentioned this framework in 1995 (Ladson-Billings, 1995; Yuknis & Bernstein, 2017). The goal is for higher education institutions

to create a safe and positive environment that includes people from all cultures and "(dis)abilities" (Yuknis & Bernstein, 2017, p. 4). As such, disability should be considered as another diversity feature, in lieu of an isolated category. The implementation of a disability and diversity friendly initiative in higher educational institutions contribute to improve the campus' environment and promote student diversity and acceptance (Aquino, 2016; Ladson-Billings, 1995). From the very beginning, faculty should set up an environment where students feel comfortable disclosing their disabilities and requesting accommodations, and where students will not be at the risk of failing the course (Yuknis & Bernstein, 2017).

CRDP is a framework promoting the use of learning strategies, such as incorporating more real-life situations, to expose and acknowledge cultural differences. Raising awareness of the existence of accommodations all throughout the semester and using different teaching strategies in the course are initiatives that faculty can take. The use of UDL principles helps promote the idea that all learners can have a positive learning experience and students can be provided different ways to engage in the content. For instance, certain students will learn better through group-based activities, whereas others may prefer individual assessments with no time limit. Students represent a diverse group of learners who should be celebrated in the classroom (Yuknis & Bernstein, 2017). Similarly, the Universal Design for Instruction (UDI) is also a set of principles for faculty to implement inclusive teaching practices following accessibility (Izzo et al., 2008; McGuire et al., 2006).

Although some universities may have accessibility training available, it would be worthwhile to study how faculty are implementing accessibility in their courses after the training has concluded. According to Wynants and Dennis (2017), results showed that, when faculty receive enough training on how to implement UDI in their courses, they are more motivated to

start incorporating the course content. When a higher education institution commits to adopt new training and accessible teaching practices for all departments across campus, it results in a collaborative effort for inclusion of all learner types. In order to educate faculty on accessibility of their course content, professional development (PD) sessions and training could be facilitated to design accessible content for all types of learners (Izzo et al., 2008; McGuire et al., 2006).

As online learning environments become more prevalent in higher education in particular, different assessment modes can be utilized to move away from the lecture-test model. In online language courses in higher education institutions, Cardenas and Inga (2021) discovered that, faculty training on accessible technology and didactical strategies for visually impaired students is lacking, which presents an issue to be further addressed. Therefore, faculty must have an open mindset to these new methodological approaches that will help students with visual impairments to be successful in learning a foreign language (Cardenas & Inga, 2021).

These solutions will contribute to students' full integration in online courses to ultimately improve their college experiences and ensure their success (Aquino, 2016). Thus, disabilities should be addressed by implementing further accommodations for all students according to their needs (Aquino, 2016). Lewin-Jones and Hodgson (2004) recommended that, faculty teaching a foreign language should further include students with visual impairments in particular, with the assistance of the higher education institution. As such, taking the time to receive guidance to include students with visual impairments in language courses will benefit both students and the institution as a whole (Lewin-Jones & Hodgson, 2004). Not only the faculty will feel more empowered and equipped to offer accessible materials, but students will also be positively impacted in their learning experiences. Therefore, students may recommend the particular institution to other peers who wish to receive a flexible education.

In addition, Eikel-Pohen (2019) found that, if the faculty invites other students to create accessible course content for their visually impaired peers, it will be positively perceived as a collaborative effort. Students with visual impairments will then greatly improve their language skills and successfully complete their language requirements when they are able to enhance and develop other skills, such as listening, speaking, reading, writing**,** and touching (Eikel-Pohen, 2019). According to Eikel-Pohen (2019), touching consists of utilizing Braille for audio or video file transcript, as well as using digital tools to assist them in navigating the course. When collaborative efforts are put in place within the institution, Eikel-Pohen (2019) showed that sighted individuals may be more aware of the different visual impairments, and such awareness may contribute to improving visually impaired students' success in the language classroom. Therefore, Eikel-Pohen's (2019) study posits that, higher education should shed light on accessibility by investing more time, money and research into accessibility issues to create inclusive language courses.

Applying the Disability Studies Theory for College Students with Disabilities and CRDP frameworks may assist faculty and higher education institutions in promoting equal access for individuals with disabilities. According to Siebers (2006), the body should not be represented according to its characteristics, nor by prejudices that society establishes. Rather, people's language and actions should be part of their identities. However, as disability may be a societal construct, the goal is to break apart the negative body perception (Siebers, 2006). To do so, providing accommodations and ensuring that all people have equal accesses will allow theory and practice to go hand in hand (Siebers, 2006). Particularly in a global world, ensuring that students with vision impairments can learn a foreign language will allow for further professional opportunities and inclusion into the society (Cardenas & Inga, 2021). As the use of Braille or

audio transcript are a great first step towards accessible language courses, Cardenas and Inga (2021) showed that more efforts should be employed to support pedagogical practices for language faculty teaching students with visual impairments.

Overview of Research Methodology

For this dissertation, I adopted a qualitative, phenomenological study. I conducted semi-structured interviews lasting between 60 to 90 minutes with 10 online language instructors who had experiences teaching students with visual impairments. The goal was to understand the essence of a phenomenon, accessibility, through faculty members' lived experiences. As Patton (2015) affirmed, phenomenology-based research involves a design that intends to understand the essence of the individual's lived experiences. It does not ask *how* did a phenomenon happen, but *what* is its nature or essence.

For the data analysis, I chose to adopt an Interpretative Phenomenological Analysis (IPA) approach, as it aims to understand what happened to a small sample of selected participants (Smith et al., 2022). For this approach, semi-structured interviews allow interviewers to understand how the phenomenon appear by planning their questions ahead of time, but also with the freedom to add some, if needing to follow up on a certain aspect of the interviewees' stories (Brinkmann & Kvale, 2015; Smith et al., 2022). As such, the metaphor of the interviewer as a traveler seemed applicable to my study as well, as I was constantly learning through their journey, by interacting with them to create meaning out of the collected data (Brinkmann & Kvale, 2015).

As my goal was to explore faculty's experiences teaching students with visual impairments online, I believe that the phenomenon is and will continue to constantly evolve**.** When talking about a virtual setting, this may include online synchronous or asynchronous

learning environment. In an online synchronous course, regular online meetings utilizing videoconference tools may be scheduled in order to foster live interactions among the students (Peacock et al., 2020). In an asynchronous course, students will have other activities to interact and learn at their own pace, however instructors need to be aware about students' level of motivation, emotion, and sense of belonging when creating an asynchronous online learning environment (Peacock et al., 2020).

Significance of the Study

As evidenced in the literature, Section 504 of the Rehabilitation Act of 1973 and the 1990 ADA require all higher education institutions to implement accessibility in all webpages and materials. However, as Alahmadi and Drew (2017), and Buenaño-Fernández and Luján-Mora (2019) found, higher education institutions have not been taking the necessary steps to ensure accessibility in learning materials. Studying both online language courses and learners with visual impairments will contribute to fill the gap in the literature.

This study aims to provide solutions by inviting all higher education faculty and other specialists to collaborate in receiving appropriate training on accessibility (Oswal & Meloncon, 2014; Topor & Rosenblum, 2013) and to unanimously implement all the different strategies and tools into the courses. For instance, Cardenas and Inga (2021) affirmed that, younger generations are constantly connected to the Internet. Therefore, several online accessible tools, such as WhatsApp, YouTube, and other social networking websites may allow students with disabilities to connect among each other. In foreign language courses, these different tools will allow students with visual impairments to further develop their interpreting and communication skills through voice recording, along with other typhlo-technical tools (Cardenas & Inga, 2021). Typhlo-technical tools refer to technology tools used to teach and support visually-impaired

learners. Opening doors to visually-impaired students in the global world by providing them an opportunity to learn foreign languages will also allow faculty to learn to use assistive technology and meet their students' needs (Cardenas & Inga, 2021). This will contribute to successfully leading these students to an inclusive path, when navigating a global world with intercultural competency.

Delimitations

A delimitation I had was that I chose to only interview online language faculty to examine their experiences in their courses on one kind of disability to find comparable data among all my interviews. Nonetheless, my goal was to include faculty's experiences with diverse vision impairment learners, as well as supporting faculty in adopting a more inclusive pedagogy. Additionally, I selected faculty from U.S.-based higher education institutions, in lieu of including more countries and exploring more online accessible practices from different faculty.

Assumptions

As several studies pointed out, one assumption I held when conducting the interviews was the idea that the participants might take time to reflect on the experiences they had teaching students with visual impairments. Therefore, they might have accessibility strategies and experiences to share as well as potential tools they used with their students. Lastly, one assumption that I considered was that due to the COVID-19 pandemic, perhaps there were more possibilities to find eligible participants with innovative strategies to share during the interview. As the COVID-19 pandemic forced all higher education institutions to adopt an online format for their courses, language faculty who never taught online would have that experience, but they might also have addressed accessibility issues for visually impaired students in their courses.

Definitions of Terms

American with Disabilities Act (ADA): Established in 1990, this act required all institutions, employers, public services, and public accommodations (which included privately owned businesses) to provide civil rights and accommodations for all individuals with physical, mental or invisible disabilities (Cory, 2003). According to the Americans with Disabilities Act Amendments Act of 2008, or ADAAA., all individuals living in the United States presenting a mental or physical disability must be fully integrated and receive appropriate accommodations (U.S. Equal Employment Opportunity Commission, 2008).

Assistive Technology (AT): Any technology tool, device, and software, such as, a screen reader, screen magnifier, and Braille reader that students with disabilities will utilize to access the course content, and/or that faculty and office of disability or instructional technology specialist will provide to students.

Quality Matters (QM) guidelines: QM is a set of guidelines that was created to measure the quality of an online course (Quality Matters, 2021). As the QM program now offers several opportunities for higher education institutions to receive training, grants and PD, the goal is to provide students with high quality educational materials through different processes to ensure inclusivity and success for all students (Quality Matters, 2021).

Section 504 of the Rehabilitation Act of 1973: This section of the act particularly forbade any federally funded program and universities to discriminate against any student or individual with a physical impairment (Saxton, 2006). Although it was enacted in 1973, it was not enforced until 1977 in the United States (Cory, 2003).

Students with visual impairments: For the purpose of this dissertation, this term will be used to represent all students with different levels of visual impairments. Those may include, but

are not limited to color-blindness, partial blindness, complete blindness, macular degeneration, or cortical visual impairments.

Vision impairments: According to the World Health Organization, vision impairments may include distance vision and near vision impairments, which cause the individuals to have more issues when accessing information, locations, and transportation (World Health Organization, 2023). The terms vision impairment/s and visual impairment/s may be used interchangeably.

Web Content Accessibility Guidelines (WCAG): This is a set of guidelines created in 1997 by the World Wide Web Consortium (WC3) to promote further accessible materials for individuals with different disabilities (Persson et. al, 2014).

Summary

It is urgent that the different higher education institutions provide support to their faculty, so accessible education methods can be designed to fit all students' needs. As the Disability Studies Theory for College Students and the Culturally Relevant Pedagogy frameworks can both be utilized to advocate for further efforts to provide students with disabilities accessible course materials, faculty may benefit from training and support. Therefore, visually impaired students in foreign language courses will possess equal and indispensable access to developing skills in order to succeed in a globalized society.

In the second chapter, the existing literature was reviewed to explore the available research on accessibility in higher education, visual impairment types, online language learning through the lens of faculty experiences, as well as strategies and tools to assist visually impaired students. As I identified specific gaps remaining in research, particularly for faculty teaching students with visual impairments in online language courses, this study will showcase online

accessible solutions needed for this group of students. Therefore, chapter 2 will shed light on both lack and existence of accessibility strategies that may be implemented in online language courses to implement the importance of foreign language learning.

The third chapter focused further on the adopted research methodology, and detailed the nature of the study, the sampling process, the participant protection, as well as interview protocol and design. The fourth chapter analyzed the results from the data collected from the faculty interviews. Finally, the fifth and last chapter consisted of discussing the findings and the potential phenomenon identified in the results. It concluded with different recommendations in tandem with the existing literature.

CHAPTER 2: LITERATURE REVIEW

Wolanin and Steele (2004) found that, 5% of undergraduate students enrolled in 1999-2000 in the United States reported a visual impairment; as a result, they recommended that, students should receive prior preparation and accommodations from the time they start their K-12 education, to facilitate their transition to higher education. However, Larkin (2013) discussed a discrepancy between the law's requirements and the application of such requirements in educational institutions. As such, Larkin (2013) revealed that, accessibility in courses was scarce and this matter should be in the forefront.

To address the issues of online accessibility in language courses for faculty, particularly for students with visual impairments, several themes were identified in this literature review. These are: Accessibility in Higher Education, Accessibility in Online Language Learning and Students with Visual Impairment, Faculty Experiences and Faculty Support and Training, and Strategies and Tools to assist Visually impaired Students. They were then categorized under two sub-themes: Challenges and Opportunities. The corresponding studies and publications under each theme and sub-theme will help offer an overview of existing practices in order to understand faculty's experiences with online accessibility for visually impaired students. Additionally, the literature review will posit the need for further research in supporting online language faculty. Table 1 lists the key authors and their publication dates under their respective themes and sub-themes.

Table 1

Literature Table

	Opportunities	Challenges
Accessibility in Higher Education	● Existence of accessible guidelines and technology (Almeida et al., 2020; Baptista et al., 2016; Bass & Lawrence-Riddell, 2020; Betts, 2013; Buenaño-Fernández & Luján-Mora, 2019; Carvajal et al., 2018; Izzo et al., 2008; Koulikourdi, 2009; Marquis et al., 2016; McGuire et al., 2006; Park et al., 2017; Reyes et al., 2021; Roscorla, 2017; U.S. Access Board, 2017; Wynants & Dennis, 2017; Yuknis & Bernstein, 2017). ● Opportunity to enhance learning experiences (Alim et al., 2017; Carvajal et al., 2018; Ingram et al., 2012; LaSala et al., 2019; Oswal & Meloncon, 2014; Passman & Green, 2009; Pittman & Heiselt, 2014; Rao & Tanners, 2011; Rieber & Estes, 2017). ● Importance of Disability Studies Theory for College Students (Abes & Walla, 2017; Bilias-Lolis et al., 2017; Kimball & Thoma, 2019).	● Lack of legal compliance (Edmonds, 2004; Heilig, 2018; Kent, 2015; Rieber & Estes, 2017; U.S. Access Board, 2017). ● Inconsistency in accessibility in higher education institutions (Alahmadi & Drew, 2017; Buenaño-Fernández & Luján-Mora, 2019; Case & Davidson, 2011; Fichten et al., 2003; Fichten et al., 2009; McManus et al., 2017; Park et al., 2019; Roberts et al., 2011). ● Barriers for accessibility (Cheng, 2010; Coleman & Berge, 2018; Kamaghe et al., 2020; Park et al., 2019; Wattenberg, 2004; Wolanin & Steele, 2004).
Accessibility in Online Language Learning and Students with Visual Impairment	● Language learning in an online setting (Cardenas & Inga, 2021; Gonzalez-Lloret, 2020; Kohnke & Moorhouse, 2020; Lamichhane, 2017; Maican & Cocorada 2021; Pleines, 2020; Sun, 2014; Zhang et al., 2021). ● Different degrees of vision impairments (Disabled World, 2021; Molina-López & Medina-Medina, 2019; World Health Organization, 2022). ● Impact on student success (Alamri & Tyler-Wood, 2017; Barnard-Brak & Sulak, 2010; Betts et al., 2013a; Fichten et al., 2016; Hong et al., 2017; Richardson, 2017; Topor & Rosenblum, 2013).	● Issues in online language learning for students with visual impairments (Cardenas & Inga, 2021; Mobaraki et al., 2017; Zhang et al., 2021). ● Addressing visual accessibility (Alnfiai & Sampalli, 2018; Cardenas & Inga, 2021; Kapperman et al., 2018; Kelly & Smith, 2011; Molina-López & Medina-Medina, 2019; Kapperman et al., 2018).

Faculty Experiences and Faculty Support and Training	• The Role of Culturally Relevant Disability Pedagogy (Almog, 2018; Amponsah, 2021; Grier-Reed & Williams-Wengerd, 2018; Waitoller & King-Thorius, 2016; Westine et al., 2019). • Constant collaboration (Alahmadi & Drew, 2017; Betts et al., 2013b; Edmonds, 2004; Fichten et al., 2009; LaSala et al., 2019; Martin et al., 2019; Oswal & Meloncon, 2014; Willis & O'Reilly, 2017). • Potential solutions to fill the gap (Enkin & Mejías-Bikandi, 2017; Foster et al., 2018; Francis et al., 2021; Glazatov, 2012; Jin et al., 2021; Kapperman et al., 2018; Lamicchane, 2017; Pleines, 2020; Yabe, 2015).	• Need for further training and support (Austin & Sorcinelli, 2013; Blake & Delforge, 2004; Gacs et al., 2020; Guilbaud et al., 2020; Hromalik et al., 2020; Kendall, 2018; Liakou & Manousou, 2015; Marquis et al., 2016; Martin et al., 2019; Moriña, 2017; Oswal & Meloncon, 2014; Sun, 2011, Valle-Flórez et al., 2021). • Opportunities for improvement (Betts et al., 2013b; Bickford, 2006; Coleman & Berge, 2018; Gacs et al., 2020; Glazatov, 2012; Heilig, 2018; Hong et al., 2017; LaSala et al., 2019; Moriña, 2017; de Mello Motta, 2004; Nover, 2021; Oswal & Meloncon, 2014; Topor & Rosemblum, 2013; Valle-Flórez et al., 2021; Veal et al., 2005).
Strategies and Tools to assist visually impaired Students	• Accessible course design (Buggey, 2000; Betts et al., 2013b; Case & Davidson, 2011; Dickinson, 2005; Heilig, 2018; Mulfari et al., 2015; Pittman & Heiselt, 2014; Wattenberg, 2004; Zuhadar et al., 2016). • Communication (Alamri & Tyler-Wood, 2017; Blankenship, 2008; Case & Davidson, 2011; Dickinson, 2005; Roberts et al., 2011; Vines et al., 2019).	• Overcoming course design issues (Alahmadi & Drew, 2017; Betts, 2013; Betts et al., 2013a; Carvajal et al., 2018; Case & Davidson, 2011; Fichten et al., 2009; Kent, 2015; Kent et al., 2018; LaSala et al., 2019; Park et al., 2019; Passman & Green, 2009). • Implementing more tools to ensure visual accessibility (Edmonds et al., 2005; Häkkilä et al., 2018; Hamid, 2020; Ho, 2021; Kamaghe et al., 2020; Park et al., 2019; Retorta & Cristovão, 2017; Roberts et al., 2011).

Accessibility in Higher Education

There are several guidelines and technologies available to make courses accessible in higher education. It is a legal requirement from the 1990 ADA law that all public entities should establish effective communication with all students with disabilities to better identify their needs. In addition to the ADA, several other laws around the world have been approved, such as the "Australian Disability Discrimination Act (1992), Disability Discrimination Act (1995) of United Kingdom and Special Educational Needs and Disability (2001)" (Koulikourdi, 2009, p. 7).

Existence of Accessible Guidelines and Technology

The 508th Section Compliance is a federal requirement in the ADA to provide accessibility to all individuals with a disability. Additionally, as of January 18th, 2017, a federal rule requires all Information and Communication Technology (ICT) to be accessible to all individuals to allow equal dissemination of information through the use of electronics and technology (U.S. Access Board, 2017). Most specifically, Title II of the ADA requires all public universities to provide accessible materials to all individuals, and Title III presents the same requirements for private universities (Betts, 2013).

In addition, the WCAG 2.1 guidelines exist to ensure ADA compliance in all technology platforms and websites and are updated annually (Baptista et al., 2016). Among other tools, they provide alternative text and audio descriptive solutions, particularly for videos and non-textual media and materials. According to Almeida et al. (2020), implementing those materials could also contribute to improving navigation for students with vision impairments and provide them with opportunities to study online. Buenaño-Fernández and Luján-Mora (2019) took this opportunity a step further by positing that studying the students with visual impairment's level of

engagement would lead to more productive results to examine the effectiveness of the WCAG 2.1 guideline implementations. Furthermore, Carvajal et al. (2018) affirmed it would help identify the appropriate ICT for each specific group of learners. Although ICT greatly benefits distance teaching and learning, all learners should be able to benefit from equal access to online course content. Particularly using technology also allows educators to create, design, and deliver interactive and accessible content to all learners (Bass & Lawrence-Riddell, 2020). As ICT are rapidly evolving for students with visual impairments in particular, universities must stay up to date with new technology tools, in order to inform the appropriate employees, faculty and staff of those updates (Reyes et al., 2021).

In addition, principles such as the UDL and the UDI can be utilized and implemented further to help universities adopt these different guidelines (Izzo et al., 2008; McGuire et al., 2006; Wynants & Dennis, 2017). Based on neuroscience, the UDL guidelines were created to provide students with multiple ways of active engagement and motivation by the content they are learning (Bass & Lawrence-Riddell, 2020). Therefore, UDL equip educators to provide students with the necessary accommodations to achieve their learning outcomes. This can be done by including different forms of assessments, course materials and to examine students' behaviors and attitudes in the task they complete (Bass & Lawrence-Riddell, 2020).

Within the same UD concept, the UDI guidelines focus on providing guidance to instructors to create inclusive and engaging materials on a variety of online platforms and materials (Park et al., 2017). In their studies, Park et al. (2017) found that when UDI is offered in PD initiatives, faculty express satisfaction when using UDI to assist students with disabilities by implementing accommodations. As students with disabilities have a lower rate of successful degree completion, online accessibility should be urgently addressed (Yuknis & Bernstein,

2017). However, the literature shows that as the number of students disclosing a disability increases in higher education, the availability of accessible materials, tools and support is still seldomly implemented in the institutions, despite the different electronic tools and strategies that are made available (Marquis et al., 2016; Yuknis & Bernstein, 2017).

As Roscorla (2017) stated, there tends to be a disconnect between available resources such as Braille printers and WCAG guidelines, and the university's initiative to provide faculty with training on accessibility. However, there are grants available to support institutions in the United States (Roscorla, 2017). Therefore, tools to assist with accessibility could be purchased and applied accordingly. As such, opportunities exist for higher education institutions to promote online accessibility, as evidenced in the next section.

Opportunities to Enhance Learning Experiences

Alim et al. (2017) have shown the concept of Culturally Sustaining Pedagogy (CSP) ensures inclusion of all individuals through accessible design of online courses and offers an effective learning experience. It involves incorporating the UDL and the UDI as it was found to ease the challenge of online learning (Alim et al., 2017; Carvajal et al., 2018; Ingram et al., 2012; LaSala et al., 2019; Oswal & Meloncon, 2014; Pittman & Heiself, 2014; Rao & Tanners, 2011; Rieber & Estes, 2017). Therefore, there are several existing guidelines for faculty to use in their course design. As an example, Passman and Green (2009) went on to show that the UDL could be efficiently applied in the syllabus if an accessible template was standardized by the institution as a whole. An accessible syllabus sets the tone to establish equitable, flexible, simple, intuitive, and multiple instructional ways to deliver the course content. The opportunity for faculty to contribute and constantly improve and update the course would also appear to be efficient, when feedback from students and peers is received (Passman & Green, 2009). These examples would

allow the higher education institutions to improve ADA compliance in academic material, as required. To do so, the Disability Studies Theory for College Students could be examined and used as a base.

Importance of Disability Studies Theory for College Students

When acknowledging the existence of Disability Studies Theory in higher education, the institutions as a whole may recognize that a disability is part of a student's identity (Abes & Wallace, 2018). Therefore, the implementation of accessible accommodations to ensure equity and acceptance is urgent. Additionally, when faculty show compassion and understanding towards students, Bilias-Lolis et al. (2017) revealed that it allows students with disabilities to succeed along with feelings of recognition as well as supported in their classes. Building a community ultimately will not only help students feel more included, but this will also benefit educators to promote a climate of solidarity and cooperation (Bilias-Lolis et al., 2017). As Abes & Wallace (2018) confirmed, ADA compliance does not seem to be taken into consideration when implementing educational strategies. However, designing a safe and accepting learning environment to welcome all students must be a priority to promote a more equal and inclusive education (Abes & Wallace, 2018; Bilias-Lolis et al., 2017). As research on college students with a disability are continuously increasing, higher education institutions should put ADA compliance in the forefront of their practices and policies of all kinds (Kimball & Thoma, 2019).

Lack of Legal Compliance

It is a legal requirement that all courses in higher education must comply with the Americans with Disabilities Act (ADA), for all students with disabilities (Kent, 2015). Edmonds (2004) posited that despite the existence of Title II and Title III of the ADA since 1990, which requires that all public and private higher education institutions provide students with equally

accessible learning opportunities, there are no specific guidelines that particularly apply to accessibility regarding online courses. Although the updated 508th compliance section of the ADA shows that ICT and technology tools should be utilized to ensure accessibility to all individuals in need (U.S. Access Board, 2017), Rieber and Estes (2017) revealed that, the instructional technology field seems to lack consistency on this concerning issue.

According to Rieber and Estes (2017), ensuring accessibility consists of equipping students with disabilities with content in alternative formats, to provide them with equal access to the course materials. There are different levels of accessibility issues that should be addressed, depending on the disability reported by the students. For instance, there are multiple physical disabilities that hinder students' ability to access internet resources, such as visual, hearing, and speaking impairments. Additionally, learning disabilities should also be considered in order to reduce the lack of accessibility on higher education resources (Rieber & Estes, 2017). Heilig (2018) found that, in many higher education institutions, campus maps are mostly non-ADA compliant, which also contributes to a lack of accessible resources for students in need of accommodations. As a result, the lack of access to higher education resources greatly impacts students from being encouraged to pursue their studies.

Inconsistency in Accessibility in Higher Education Institutions

Nonetheless, Case and Davidson (2011) revealed that accessibility is not implemented and set as a priority from the moment a course is first designed. Therefore, there is no accommodation provided as soon as a student with a disability starts the semester. Similarly, Alahmadi and Drew (2017) also found that, as a whole, universities are becoming less and less accessible, particularly for students with visual and hearing impairments. As an example, Fichten

et al. (2003) showed that university websites themselves were not accessible, which is an initial barrier for students in need of accommodations.

In addition, accessible ICT are not readily available on campuses, as it is assumed that students with visual impairments in particular seem to already have access to ICT at home (Fichten et al., 2009). There is a disconnect between the technological resources that students already own and the ones that should be available to them when taking online courses. As Buenaño-Fernández and Luján-Mora (2019) stated, there is limited research conducted on visually impaired students' accommodations. Therefore, Buenaño-Fernández and Luján-Mora (2019) called for awareness of making online courses accessible to all learners. In order to ensure accessibility, different technological tools can be provided. Buenaño-Fernández and Luján-Mora (2019) showed that Massive Open Online Courses (MOOCs) in particular prevented students with disabilities to access the course. It appears contradictory, as the concept and the purpose of MOOCs are the availability and the accessibility of higher educational learning content to all students, according to the WCAG 2.1 (Buenaño-Fernández & Luján-Mora, 2019).

Park et al. (2019) also shed light on the fact that there is an alarming contrast between the openness of MOOCs, which originated from the Open Educational Resources (OER) initiative, and the existing availability of accessible educational content for all types of learners. Despite the existence of the UDL and the WCAG 2.1 guidelines, it was found that MOOCs are not taking students with visual impairments into consideration (Park et al., 2019). As such, screen readers are unable to detect the information in the menus, and to find alternative text for non-textual and media content. Therefore, there has been a growing need for further studies to improve this particular area of education (Park et al., 2019).

However, higher education students may sometimes be afraid to ask for help and declare their impairments, according to McManus et al. (2017). Students appear to be intimidated by the lack of accessibility in online courses, which results in an overwhelming and challenging online learning experience. Roberts et al. (2011) showed similar results. As such, a large majority of students stated that they chose not to disclose their disabilities due to personal reasons, or the lack of encouragement for them to ask for accommodation. Therefore, one solution would be for faculty to provide online accessible course materials from the beginning of the course. This will allow all students to equally access the course content and ultimately, give them a sense of comfort and reassurance.

Barriers for Accessibility

Coleman and Berge (2018) revealed that all university administrations are responsible for offering accessible websites and accommodations to all students with visual impairments such as (but not limited to) captions, screen readers, screen magnifiers, and Braille displays. From a legal perspective, Wattenberg (2004) stated that AT for online teaching and learning need to be more accessible for every student. Although ADA compliance has been a federal requirement since 1990, more efforts are needed to enforce and implement it. Nonetheless, despite the legal accessibility requirements, several factors may impede the institutions from following them closely.

As such, there are often financial barriers for the higher education institutions to purchase the corresponding AT (Kamaghe et al., 2020; Wolanin & Steele, 2004). It is an issue that must be further addressed for higher education institutions to understand that the high cost could potentially preserve the quality of education offered in the institutions. Additionally, purchasing accessible AT may prevent against potential legal issues such as lawsuits against the higher

education institutions, as Arizona State University faced in 2010 when the textbook navigation for students with visual impairments was not properly followed on the Kindle DX e-book reader (Cheng, 2010). Another barrier found by Park et al. (2019) was the lack of linguistic accessibility. Translations are sometimes missing for the course content, which reduces the opportunity for students from around the world to access the courses. Therefore, it is undeniable to shed light on the importance of language learning for all students, which is the core of this study.

Accessibility in Online Language Learning

Languages help students build bridges between different cultures and acquire global awareness. Particularly, studying a language online will allow them flexibility as they improve their skills. To effectively learn a language, it is paramount for students to develop listening, reading, speaking, and writing skills in the target language (Cardenas & Inga, 2021).

Language Learning in an Online Setting

In order to successfully study a language online, Sun (2014) found that collaborative learning opportunities and engaging content were most effective among learners. In addition, autonomy was also a characteristic that online language students noted to remain motivated to learn (Sun, 2014). A solution to keep students motivated and allow them to interact with both instructors and other classmates may be to attend synchronous classes. As Kohnke and Moorhouse (2020) affirmed, during the COVID-19 pandemic which forced in-person class meetings to become available online, using the Zoom videoconference platform was a helpful and fruitful solution for students to interact with the target language. Participation in an online language course is vital for students to stay motivated (Pleines, 2020). Zhang et al. (2021) found that language learners will respond positively and enjoy learning a foreign language when they

are fully engaged through collaborative and interactive activities in a language course. Therefore, it is important for faculty to learn about various technology tools and how to properly use and implement them so students stay engaged (Gonzalez-Lloret, 2020; Kohnke & Moorhouse, 2020). Teaching students to use the Zoom features properly was also highly recommended by Kohnke and Moorhouse (2020). However, it remains important for language instructors to consider certain obstacles such as stable internet connection and therefore, providing students with alternative asynchronous tasks as well as transcripts when applicable (Cardenas & Inga, 2021; Gonzalez-Lloret, 2020). As such, if instructors do not maintain constant communication and participation in online language learning, Maican and Cocorada (2021) found that it could be a source of anxiety for students, particularly in a situation of emergency remote setting such as the COVID-19 pandemic. Therefore, addressing the lack of resources for different groups of students is paramount to ensure online accessibility.

Issues in Online Language Learning for Students with Vision Impairments

Regarding online accessibility, pedagogical resources are currently insufficient for students with visual impairments and this creates a social division between this group of students and students who do not present a visual impairment (Cardenas & Inga, 2021). As accommodations are unique to all individuals, depending on the visual impairment that students may disclose, the tools and software will differ (Zhang et al., 2021). Acquiring a new language can be successfully accomplished through the use of accessible ICT and CALL and other innovative technology such as JAWS and Braille readers (Cardenas & Inga, 2021). It is also important to acknowledge the different Braille available in each language to ensure successful language learning (Mobaraki et al., 2017). Therefore, implementing the appropriate technology

targeted to students' needs may contribute to build a bridge between students with visual impairments and online language learning (Cardenas & Inga, 2021).

Different Degrees of Vision Impairments

According to the World Health Organization (2022), the International Classification of Diseases identified two groups of vision impairment. In the first group, distance vision impairment can be either mild, moderate, severe, or complete blindness. The second group involves near vision impairments that may vary. In any case, each vision impairment can be addressed and corrected in different ways (World Health Organization, 2022). Causes of those visual impairments may be diverse such as degenerative, glaucoma, or birth impairment.

In addition to different levels of vision, color blindness is also a visual impairment that also presents diverse types and degrees (Disabled World, 2021). For instance, individuals with monochromasy do not see any color. Protanomaly refers to a type of colorblindness when people see the color green instead of red. People with deuteranomaly have difficulty distinguishing different shades of green, yellow, orange, and red. Dichromasy is for people who are unable to distinguish these colors. Protanopia is when people cannot perceive the brightness of these colors and may see them as black or dark gray (Disabled World, 2021). To address color blindness, Molina-López and Medina-Medina (2019) found that implementing other visual clues such as geometrical forms, sounds, written or audio descriptions, and alternative colors other than shades of red and green may be solutions for students using technology tools such as videogames.

Addressing Visual Accessibility

Allowing alternative formats by utilizing different technology tools addresses further inclusion and accessibility in computer-based games and gamification (Molina-López & Medina-Medina, 2019). Similarly, facilitating instructions on the JAWS screen reader tool will allow

students with visual impairments to learn a foreign language thanks to its speech recognition (Kapperman et al., 2018). Results showed that downloading a book in a foreign language can be successfully recognized and read in that language thanks to the different menu options and the variety of available languages (Kapperman et al., 2018). As Kelly and Smith (2011) found, assistive technology available to visually-impaired students has been in existence since 1965. With the constant growth and evolution of assistive technology, several solutions are available to address visual impairments of different types. Nonetheless, a need for more research on this topic is salient and requires more attention in order to improve visual accessibility in online learning (Kelly & Smith, 2011).

As smartphones are now more accessible to individuals with a visual impairment, there is an opportunity to download applications such as BraillePassword, for them to successfully use their cellphones (Alnfiai & Sampalli, 2018). Using this tool eases the access to technology and to enter their credentials on any device or platform without any additional tool such as headphones or screen accessories (Alnfiai & Sampalli, 2018). Nonetheless, assistive technology must be improved in order to facilitate access to visually-impaired individuals (Alnfiai & Sampalli, 2018). As such, innovation on accessible tools is highly needed for visually impaired individuals, who require particular attention when learning a foreign language (Cardenas & Inga, 2021).

Impact on Student Success

To better serve students with disabilities, Betts et al. (2013a) found that the whole body of higher education institutions should be involved in defining the different degrees of low to no vision impairment. Additionally, it may be of great importance to point out that according to Fichten et al. (2016), visually impaired students may also declare multiple disabilities in addition to a vision impairment. As such, students with visual impairments or multiple disabilities need to

be further encouraged to attend higher education institutions. Nonetheless, colleges and universities must be prepared to offer the appropriate accommodations for them. In addition, Fichten et al. (2016) found that part of the student demographic may also be older, lack financial resources, and have family obligations, which would further discourage them to attend college.

This is where distance education and online learning could effectively support them. As Barnard-Brak and Sulak (2010) affirmed, online students with visual or mobility impairments require more accommodations than when they take in-person courses. Alamri and Tyler-Wood (2017) revealed that, as the population of students with a disability showed that they take twice as long to graduate as other students, it was concluded that instructors need further training on designing accessible materials and using the UDL. In addition, Richardson (2017) also stated that students with disabilities, particularly students with multiple ones, have a lower success rate in online courses, when the course is not accessible. Therefore, the different accessibility accommodations need to acknowledge different types of disabilities and thorough support is required from the higher education institutions.

As far as language faculty are concerned, Topor and Rosenblum (2013) noted that there is a growing need for them to receive training on instructional strategies and resources to teach students with visual impairments, as the population is growing and becoming more diverse, particularly in the United States and Canada. Therefore, implementing more accommodations will greatly benefit any current student with visual impairments in the near future. Particularly for students with a visual impairment learning a foreign language, Topor and Rosenblum (2013) highlighted the existence of strategies shown to have a positive impact that can be adopted to more effectively teach new vocabulary to students with visual impairments and provide them with hands-on experiences. Those strategies allow students to learn English, or the target

language's Braille language. As an example, using the Sheltered Instruction Observation Protocol (SIOP) strategy for second-language learners may be helpful for all language instructors, as it focuses on the use of multimodal strategies, providing students with hands-on materials, adjusting their speech, and further learning students' backgrounds and previous experiences (Topor & Rosenblum, 2013).

As the Braille language differs depending on the language spoken in each country, students have the opportunity to become more familiar with these different Braille variations, depending on the target language of their choices. As Hong et al. (2017) demonstrated, the development of Unified English Braille (UEB) took place in 2004 to facilitate the communication among all English-speaking countries. Therefore, knowing that different Braille versions are available for students learning a new language can also be an important feature to keep in mind when implementing these accommodations. Faculty may inquire materials in the target Braille language, to better serve the student population that would benefit from it (Hong et al., 2017). When faculty are aware of the available resources to assist their students, it will benefit both teaching and learning experiences.

Faculty Experiences on Training and Support on Online Accessibility

Successfully implementing and applying online accessibility involves focusing on faculty's training and knowledge as they encounter online accessibility issues in their courses. In this section, I reviewed the literature on faculty experiences, training and support focusing on constant collaboration, potential solutions to fill the gap, need for further training and support, as well as opportunities for improvement. I also connect it with the CRDP theoretical framework.

The Role of Culturally Relevant Disability Pedagogy

As suggested by Yuknis and Bernstein (2017), CRDP must be implemented in higher education teaching practices to ensure inclusive and accessible environments for students with disabilities. The UDL guidelines may allow institutions to advocate for ADA compliance in their courses, as accessibility is a priority (Westin et at., 2019). When ensuring equity in the online course, faculty help students build a sense of belonging in an inviting, learning space. Nonetheless, faculty require support from other institutional entities, so accessibility and disability received attention and becomes a priority (Waitoller & King-Thorius, 2016). As revealed in Waitoller and King-Thorius's (2016) study, the use of UDL guidelines and acknowledging the CRDP and CSP can assist educators in designing equitable online practices to assist students with a disability. Additionally, thanks to CRDP, CSP and UDL guidelines, learner-oriented assessments may be integrated in a way that students can be socially, emotionally, and culturally engaged (Grier-Reed & Williams-Wengerd, 2018). Whether they are quizzes, papers, or research projects and regardless of the discipline, students' needs may also be acknowledged and taken into consideration when designing these materials so students have space to express their identities and faculty may learn to adopt inclusive teaching practices (Grier-Reed & Williams-Wengerd, 2018).

When preparing students with visual impairments to an online setting, it is central that faculty are prepared to teach online and set up an accessible environment for their students (Amponsah, 2021). Particularly for this group of students, the COVID-19 pandemic revealed that, more efforts and more studies were needed to further implement inclusive strategies to acknowledge this group of students' needs in an online setting (Amponsah, 2021). The contrasts between students with visual impairments and others revealed that, accessibility online is a social justice problem and faculty should be prepared and supported to adapt their learning materials

not only in the event of an emergency situation, but always (Amponsah, 2021). As Amponsah (2021) stated, communication between students and faculty and engagement in an online setting appeared beneficial and necessary for students with visual impairments. Therefore, those students would benefit from not only receiving communication from faculty, but also for faculty to gain knowledge and awareness on equity and accessibility strategies and practices (Almog, 2018).

Constant Collaboration

When collaboration exists between different stakeholders such as educators, administrators, and researchers in higher education, lights can be shed on online teaching using UDL guidelines to ensure a high-quality education that is accessible for all (Westine et al., 2019). Betts et al. (2013b) and Oswal and Meloncon (2014) revealed that, thorough communication with the students with a disability about the course organization, and collaboration opportunities among them and the instructors, may help them disclose their special needs more thoroughly. It is paramount that, throughout their academic journey, faculty provide mentorship and support to their students in their online learning experiences (Martin et al., 2019). As an example, Fichten et al. (2009) noted that, providing training on the software and hardware adaptability for each student and adopting them according to the disability will contribute to avoid building more barriers against students with visual impairments, particularly fully blind students. As such, it will also educate students to be aware of the e-learning materials they can utilize without any issue, so there is no obstacle to their learning experience. Ultimately, doing so from the start of the course will save precious planning time to both the institution stakeholders and to the students, and be seen as a benefit to all (Fichten et al., 2009).

Depending on the higher education institution, a variety of stakeholders can further assist faculty in identifying the correct accessibility resource. For instance, Alahmadi and Drew (2017) noted that researchers, developers, and administrators could all work together to find specifically accessible solutions for the university websites, as opposed to implementing a basic accessibility tool that may not be compatible with certain disabilities. Addressing the different disabilities is a task not to be neglected in the process. Additionally, Edmonds (2004) deduced that, instructional designers can be valuable resources to assist faculty in building accessible content and, as an example, using online learning objects. Libraries also present complete databases and resources that can help increase the presence of accessible content for the students (Willis & O'Reilly, 2018). In addition, LaSala et al. (2019) revealed the possibility for the higher education institutions' administration and leadership team to collaborate with third-party providers, such as textbook publishers. This would allow more accessible content to be implemented in the different resources. Therefore, constant collaboration between all different institutional entities may show positive results in ensuring accessibility in online materials.

Potential Solutions to Fill the Gap

By following the WCAG, it was found in Yabe (2015) that captions are required when posting online videos such as lectures or tutorials. Additionally, Glazatov (2012) also showed that, using WCAG 2.0 guidelines may be adapted to the online course organization and pedagogy of the instructor. Depending on the type of impairment that the student declared, other accommodations may be required (Yabe, 2015).

In addition to following the WCAG 2.0–or currently, the WCAG 2.1-other solutions can be utilized to assist faculty knowledge in designing their courses. Yabe (2015) found that, the new Captioned Online Course (COC) shows positive results. In the COC that was reviewed, it

was noted that international and Deaf/Hard of Hearing (DHH) students benefited from this new concept the most. As Yabe (2015) stated, the COC was an online course that was built thanks to the UDL guidelines. Therefore, it showed that promoting the UDL through the COC features could highly improve students' academic achievement and that the UDL may offer efficient course design guidelines adaptable to different disabilities. During the COVID-19 pandemic, Jin et al. (2021) noted that the use of CALL was perceived positively in online language teaching and therefore, can be further developed for students with visual impairments. Another solution proposed by Francis et al. (2021), which received positive feedback from faculty, was the creation of a course about accessibility directed to faculty. As opposed to designing non-accessible courses and then having to implement accommodations when needed, collaboration between faculty and librarians would allow online courses to all be ADA compliant.

When language instructors have the opportunity to become familiar with online language learning tools, accessibility issues can effectively be resolved in the current digital world (Kapperman et al., 2018). As Lamichhane (2017) demonstrated, educating faculty on the different visual impairment tools will allow for successful implementation and new teaching strategies adapted to students with visual impairments. Therefore, online language faculty should stay updated on the different ways to create a community among students, for them to actively take part in their language learning (Pleines, 2020). As Enkin and Mejías-Bikandi (2017), and Foster et al. (2018) confirmed, although online language learning proved to be effective when the faculty establishes a sense of community and engagement, it is important to account for the different types of learners that may require further attention.

Need for Further Training and Support

As new higher education organizational structures emerge, new PD and training should be made available to faculty (Austin & Sorcinelli, 2013, Guilbaud et al., 2020). In addition to teaching, faculty should receive training in collaboration with other campus entities. Faculty should be aware of new resources in order to improve their teaching practices (Austin & Sorcinelli, 2013). In addition, Guilbaud et al. (2020) suggested other formats to benefit faculty such as the ability to watch asynchronous video tutorials at their convenience, receiving coaching and mentoring from other knowledgeable colleagues, and regularly being made aware of new pedagogical strategies in PD sessions. As Marquis et al. (2016) demonstrated in their studies, faculty stated that there was a growing need for training on inclusivity and accessibility. Inclusion of students with exceptionalities training should be part of faculty's schedules and organized with other responsible campus entities. Every university should allow for inclusive learning spaces and faculty should receive full support in this enterprise (Moriña, 2017). Additionally, Liakou and Manousou (2015) and Sun (2011) concluded that higher education institutions need further accessibility training for distance education course instructors. For instance, Oswal and Meloncon (2014) found that over half of the instructors' courses were not considered ADA compliant, which appears to be a concerning result. In the open-ended questions to which the participants could respond, they mentioned that accommodations, such as awarding extra time to students, are not as challenging to implement as having to design their courses for different disabilities (Oswal & Meloncon, 2014).

Further, some instructors stated it was not their responsibility to make their courses accessible, as the disability service office on their campuses should be trained to do so. In addition, instructors seem to lack knowledge on ADA compliance. However, as Martin et al. (2019) affirmed, online instructors must take the time to learn and apply new strategies to their

online courses. Depending on the role that the online instructor plays in the course implementation and design, it is paramount for instructors to ensure that courses are clearly designed and accessible. ADA compliance should also be a priority during the course preparation and design (Martin et al., 2019). Therefore, there should be further clarity, coordination and collaboration between faculty and their leaders in order to support faculty's professional and academic development (Austin & Sorcinelli, 2013). For instance, Kendall (2018) suggested that prior to the start of the academic year or semester, students with disabilities should be aware of the available campus resources such as tutors and employees in charge of ensuring course accessibility.

In their studies, Valle-Flórez et al. (2021) revealed that when faculty and special needs employees work together to accommodate students with disabilities and redirect them to the use of appropriate technologies. For instance, accessible ICT are allowing students to access content which would otherwise be unavailable to them (Valle-Flórez et al., 2021). In addition, training faculty on UDL to teach and show them how to apply these guidelines throughout the courses may be a viable opportunity to support faculty (Hromalik et al., 2020). Although creating a two-year long training as suggested by Hromalik et al. (2020) may be a time-consuming task for certain higher education institutions, faculty's responses to learning more about accessibility through UDL was positive. As a result, Hromalik et al. (2020) stated that students would ultimately benefit from UDL practices in their course content. Allowing rapid integration of accessible course materials so faculty do not encounter time constraints would be another solution that appeared satisfactory in Marquis et al.'s (2016) study. This would be to create accessibility checklists and templates for faculty to fill out as they build their courses.

Addressing the awareness about inclusive practices must be a priority so faculty can effectively assist students with disabilities (Marquis et al., 2016).

As the need for online courses, particularly online language courses, have been emerging for over two decades according to Blake and Delforge's (2004) findings, training on technology tools and accessibility is paramount. Another solution to support faculty in developing online language courses and professional development, a solution offered by Gacs et al. (2020) and Marquis et al. (2016) would be to offer faculty course release or compensation to allow them time to accommodate their courses. As online language teaching offers flexibility such as through the delivery of multimodal materials for all learners, training on CALL tools would be beneficial to language faculty and allow for further interactions (Gacs et al., 2020). Similarly, Martin et al. (2019) showed that faculty must take full advantage of PD opportunities not only on-campus, but also through professional organizations. As Martin et al. (2019) found that online faculty mostly play the role of course facilitator, faculty must take the initiative to stay abreast of new online practices and strategies, create a learning community among the students and foster their active participation through engaging activities.

Opportunities for Improvement

Heilig (2018) posits that disability awareness is still at its infancy in higher education institutions. For instance, Valle-Flórez (2021) showed that faculty who had never taught students with disabilities will be more concerned to implement inclusive teaching practices. Therefore, in every higher education institution, training on accessibility should be made a priority to design accessible web content for all (Moriña, 2017; Valle-Flórez et al., 2021). Instructors in particular show that their knowledge is currently weak on this matter, according to Betts et al. (2013b) and Valle-Flórez et al. (2021). As an example, Nover (2021) noted that educators should be trained

by their higher education institutions to recognize non-accessible resources and replace them. These guidelines require the use of alternative and clear formats, the facilitation of accommodations, and alternative content such as non-textual materials (Veal et al., 2005).

In addition, Oswal and Meloncon (2014) revealed that if instructors can ensure that all uploaded course material contain accessible features, it would be helpful to properly identify the need for further accessibility. Therefore, despite the proposed solutions to improve accessibility in all courses, Hong et al. (2017) noted there was an alarming lack of resources available to faculty. As resources already exist, it could potentially be an issue that could be resolved not only at the state, but also at the higher education institution level by implementing further accessibility training in online courses for faculty (Nover, 2021).

As such, LaSala et al. (2019) pointed out that some existing resources such as the Quality Matters (QM) rubrics and Microsoft Office tools that offer accessibility may not be known by instructors. Therefore, making courses accessible should be a collaborative effort between different departments in the institution. As Coleman and Berge (2018) stated, departments such as disability services, instructional design, and IT should support faculty and offer training and plan it accordingly to avoid overwhelming them, for instance by spacing out the sessions, offering workshops for faculty to practice what they have learned. Connecting the departments for further collaboration to assist faculty could be a way to better assist the students. As Glazatov (2012) noted, there is a clear disconnect between students in need of accommodations, administrators, and faculty in the effort of ensuring ADA compliance and following the state and federal regulations.

In regards to foreign language learning, there has been an increasing importance of knowing a foreign language (de Mello Motta, 2004). Therefore, not only language instructors

can advocate for foreign language learning, but also show students with disabilities they will have enough accessible tools to successfully learn them. In different countries, Topor and Rosenblum (2013) reported that the majority of faculty teaching English as a Second Language (ESL) had received previous training to teach students with disabilities, and have successfully collaborated with special education support staff. In addition, constant communication with the students in need of accommodation, as well as learning further about the students' target culture is paramount to optimally serve them. Not only on-campus, but also off-campus professional development opportunities through third party providers or professional organizations, could benefit online language faculty (Gacs et al., 2020).

While in a situation of emergency such as during the COVID-19 pandemic, those off-campus resources may be unable to provide training in a timely manner, Gacs et al. (2020) affirmed that they should not be neglected by higher education institutions and their language departments. As the opportunities exist to provide faculty with the needed support to ensure accessibility, it is ultimately an institutional decision and role to train all faculty on the importance of implementing accessibility in online courses. As such, Bickford (2006) revealed that educating faculty will enable them to adapt to the different array of learners, and further engage them in their learning experience.

Strategies and Tools to Assist Visually Impaired Students

As it was previously found in Betts (2013), it is posited that universities should be knowledgeable and aware of accessible technology tools and resources. In this final section, I explored the potential challenges encountered by faculty with course design and lack of technology implementation. I also reviewed the literature on overcoming course design issues, existing tools to ensure visual accessibility, accessible course design, and communication.

Overcoming Course Design Issues

Kent et al. (2018) showed that certain learning platforms such as Blackboard, Echo 360, Endnote, and Trove do not present accessibility features, nor do university websites. Furthermore, Kent (2015) had also demonstrated that although Blackboard has been awarded the most accessible Learning Management System (LMS) for the blind and was also the most effective LMS to host MOOCs, online courses still need to address both technical and pedagogical aspects of accessibility and inclusion. Additionally, Park et al. (2019) showed that to this date, MOOCs present several accessibility issues for students with visual impairments, although the UDL and strategies to design accessible mobile MOOCs could be shared and used by the instructors and course designers. As an example, all the information could potentially show on one page only, which would allow screen readers to detect all the information all at once, to save time and involve less effort to students with visual impairments (Park et al., 2019). As a result, students can use their time to focus on their studies and be able to access the material easily.

Furthermore, Kent et al. (2018) found that, when accommodations were made, they may not have been properly perceived by all students with disabilities. Results revealed that students with disabilities are preferring to choose a humanities' path, and that further focus on teaching and learning practices should be improved to support students' success (Kent et al., 2018). Several authors such as Betts et al. (2013a), Case and Davidson (2011), and LaSala et al. (2019) found that Alt-text could be included for images in online courses. In order to do so, the QM guidelines were used as a base and appeared to be efficient. Similarly, Betts et al. (2013a) also noted that captions, Alt-text, and color schemes should be considered in order to assist students with visual impairments. In addition to Alt-text and HTML formats, WAVE and TAW formats

also appear to be useful according to Carvajal et al.'s (2018) findings. AChecker and the Web automated tools can also be used to ensure accessibility (Alahmadi & Drew, 2017). Therefore, for students with visual impairments, ensuring that Alt-text, captions, color schemes, and material formats are implemented and compatible depending on their degree of visual impairment may be fruitful to successfully design an accessible online course.

As Fichten et al. (2009) pointed out, any accessible tool should target each student's particular type of visual impairment. For instance, the use of screen readers and text-to-speech software along with Braille displays are used by students with blindness, whereas screen magnifiers and large screen monitors are more likely to be used by students with low vision. In addition, it was noted that e-learning is more accessible to students with low vision than fully blind students. Therefore, educational content such as Flash, CD-ROM tutorials, videoconferencing, and PowerPoint presentations as well as certain websites and LMSs revealed inefficient accessibility, due to the font size and the lack of compatibility with their screen readers (Fichten et al., 2009). For students with low vision, Word documents and emails were not accessible enough (Fichten et al., 2009).

Formatting should also be an important factor to keep in mind when designing online course content. To help with such formatting issues, the use of the UDL can also be of great use. Passman and Green (2009) found that using the UDL in order to build the syllabus could be possible thanks to the Association of College and Research Libraries (ACRL), which is able to assist faculty in making their syllabus available and accessible to all. Therefore, there are existing resources on campuses that can be used further by the faculty. One feature in particular was the use of color schemes for students with low vision. Passman and Green (2009) recommended to choose a darker colored text font on a background with a lighter color, ensuring

that both font and background make a high contrast and that the colors do not have a similar shade.

Implementing More Tools to Ensure Visual Accessibility

Although they have not been consistently implemented in online courses, Roberts et al. (2011) also found that magnifiers to enlarge on-screen text, large monitors, oversized keyboard, and speech recognition software packages were part of the facilitation tools that were required for students to use for the online course materials. This would ensure standardization, so all students can be equipped with the same tools to properly access the course content. Edmonds et al. (2005) also demonstrated that using online learning objects and designs can already be implemented from the creation of the course to ensure student achievement.

Other tools from which students with visual impairments can benefit are Virtual Reality (VR), and the Oculus Rift HMD program that can be used with an Xbox 360 controller, as Häkkilä et al. (2018) pointed out. Therefore, elements of gamifications revealed effectiveness for students with visual impairments for them to engage in the course content. In addition, Kamaghe et al. (2020) found other accessible solutions through utilizing mobile devices and OER such as Moodle Mobile or Blackboard Mobile. As Park et al. (2019) proposed, mobile MOOCs can allow for further accessibility particularly for students with visual impairments, which aims to ensure digital equity.

Ho (2021) noted that screen recording was an effective way to provide students with asynchronous content through their mobile devices, so they can review it at their convenience. Retorta and Cristovão (2017) also showed that mobile devices such as smartphones can be more efficient than other ICT tools, for students with visual impairments learning ESL. For instance, an important finding by Retorta and Cristovão (2017) was that students who had the opportunity

to communicate with others by writing in the target language using social media platforms helped engage students with visual impairments. Other mobile applications such as podcasts and WhatsApp were also used and proved to be successful to practice their listening and speaking skills. WhatsApp is a messaging application that allow users to send messages, multimedia files and place video or audio calls using the internet (Hamid, 2020). As an accessible tool for visual impairments, Hamid (2020) found that, during the COVID-19 pandemic, visually-impaired students showed a positive response when learning online using WhatsApp and Zoom.

Nonetheless, students also stated that online accessibility features must be adapted further in the future, outside of an emergency situation (Hamid, 2020). QR codes could also be an effective solution when a mobile device is used along with a screen reader for visually impaired students (Retorta & Cristovão, 2017). Therefore, the use of these different AT were effective solutions to overcome those challenges.

Accessible Course Design

Case and Davidson (2011) found other potentially helpful tools such as chat rooms, audio recording tools for presentations, word documents with pre-selected reading, or Optical Character Recognition (OCR) could be included in each online course in order to detect whether a PDF document is readable for a screen reader. Dickinson (2005) pointed out another important accessibility issue. It was demonstrated that online courses might sometimes present too many links that screen readers may not be able to detect consistently.

Another possibility to make course designs more accessible is using the Universal Video Captioning platform (UVC), as Zhuhadar et al. (2016) revealed. STEM courses use a variety of empirical observations and the UVC tool happened to be beneficial to students with ESL. Previous studies have also shown great student satisfaction with the use of subtitles. Images also

include descriptions for visually impaired students (Zhuhadar et al., 2016). Betts et al. (2013b) found that a student with retinitis pigmentosa, which is a degenerative retinal disease, the greatest challenges involved the ability to access PowerPoint presentations, video content, and navigating webpages. Therefore, each visual impairment should be identified and carefully studied to provide students with appropriate tools (Betts et al. 2013b).

As Buggey (2000) affirmed, technologies, and particularly AT are evolving rapidly. Therefore, in order to better serve students with visual impairments, being mindful of the color schemes that are used for the course content and easy conversion to Braille using HTML or ASCII files is paramount. In addition, Heilig (2018), Pittman and Heiselt (2014), and Wattenberg (2004) found that, screen readers should allow Braille displays when necessary. An example of an effective screen reader is Webanywhere, according to Mulfari et al. (2015). It was found that AT on students' personal computers can be further enhanced by using cloud computing. Mulfari et al (2015) demonstrated that cloud computing allows implementing several accessible tools and applications depending on students' disabilities, with minimal access and delivery effort.

Communication

In addition, Alamri and Tyler-Wood (2017) found that ensuring communication and establishing social and teaching presence can be done through both synchronous and asynchronous means of communications. Constant communication and collaboration between students and faculty appears to be efficient to identify their needs, and learn about accessibility (Blankenship, 2008). A few of them that were positively perceived were, for instance, videoconferencing, audio stream, and online chat for synchronous solutions. Additionally, emails and discussion boards were found efficient by the students as asynchronous means of communication (Alamri & Tyler-Wood, 2017). Another solution to assist students with visual

impairment is through sonification, sighted assistants, verbal descriptions for graphs and visual content (Vines et al., 2019). Although Vines et al. (2019) focused particularly on online STEM courses, non-textual materials are often used in language courses.

When possible, Dickinson (2005) demonstrated that prior to an exam, a practice test can be given to students to check for any accessibility or design issue. This can avoid further issues at the time of the actual exam. In addition, depending on the higher education institution resources and availability, student workers could also assist faculty and the Office for Disability Services in transcribing videos, so students with visual impairments can upload the transcript in their screen readers (Case & Davidson, 2011). Specifically, for language courses, Roberts et al. (2011) stated that CALL tools appeared to be efficient to learn a language online, along with social computing and gamification. An important finding that was also found by Roberts et al. (2011) was the value of providing feedback to students in different formats, as improving the communication aspect is particularly helpful while learning a foreign language.

Summary

As the literature shows, there is an undeniable contrast between the existence of accessibility laws and guidelines and their applications in higher education institutions. In addition, training on technology tools is indispensable to ensure that faculty are fully equipped to serve students with visual impairments in an online setting. As several strategies and tools already exist for visually impaired students, it must be a requirement for all online courses to implement them and offer more accessible online course content. Furthermore, focus should particularly be set on online language courses, as students with different visual impairments are willing to take to allow them more professional and social opportunities in their future endeavors (Malinovska & Ludikova, 2017). In an attempt to provide more insights on this topic, in the next

chapter, I aimed to describe the nature of the research method design adopted in order to gather data and identify findings.

CHAPTER 3: METHODOLOGY

In this chapter, I introduce and explain the qualitative methodology I adopted to collect and analyze the data. Having identified a gap in the literature on online language courses' accessibility, this study aims to examine online language faculty experiences teaching students with vision impairments, training and support for faculty teaching online language courses and to identify and recommend strategies and tools regarding the implementation of online accessibility. This study proposes to make a novel contribution by exploring the issues of accessibility for visually impaired students in online language courses.

Research Questions

The research questions that were used to focus this study were the following:

RQ$_1$: What are faculty experiences in delivering online language courses to students with visual impairments?

RQ$_2$: How do faculty describe the support and training they receive in delivering accessible online language courses?

RQ$_3$: What are the strategies and tools faculty use when teaching languages to online students with visual impairments?

Methodology and Epistemology

As the research questions demonstrate, the study was qualitative, and particularly adopted a constructivist epistemology approach. It is important to point out that the epistemological stances of interpretivism and constructivism may be used interchangeably (Ryan, 2018). For this study, I solely refer to my epistemological stance as interpretivism, as the focus is on the participants' lived experiences (Smith et al., 2022). Additionally, interpretivism believes that all

knowledge acquired by individuals is subjective, as they gain understanding on their own experiences and create their own perception and interpretation of the world (Ryan, 2018). As the research methodology, I chose to use the IPA approach which consists of interpreting people's experiences in order to make sense of their subjective knowledge on a particular topic (Ryan, 2018; Smith et al., 2022). In this regard, people make their own subjective interpretations in their respective societies (Goldkuhl, 2012). Their different actions, interactions, and participations in the society will help them create their own perceptions and meaning of what reality means to them (Goldkuhl, 2012). In addition, IPA posits that reality may have different meaning, depending on the people's experiences and perceptions (Krauss, 2005).

IPA aims to analyze and explain a phenomenon actively, and the acts of analysis and interpretation never end (Smith et al., 2022). Phenomena can constantly shift. As such, the phenomenological researcher needs to experience and live the phenomenon as opposed to just observing it passively (van Manen et al., 2016). Additionally, unraveling the phenomenon involves constant observation and engagement with the data to further explore and describe it (Smith et al., 2009). An IPA phenomenological study also sheds light on the importance between the language and how we explain, interpret and understand the phenomenon. In that aspect, it is close to Husserl's idea of "intentional consciousness" (Vagle, 2018, p. 43). Therefore, common phenomena may emerge from the experiences of online language instructors teaching students with vision impairments. The assumption underlying the phenomenological approach to this study is that examining how faculty make meaning of their potential challenges through their experiences will reveal a common essence or trend.

Conducting semi-structured, IPA interviews contributed to describing, understanding, and interpreting people's experiences and knowledge (Goldkuhl, 2012). During the interview, I

first asked faculty about their possible past experiences with visually impaired students, as it relates to the first research question. This allowed me to gain an understanding of accessible online language course delivery. As the interviews aimed to focus on the individuals' lived experiences in-depth, phenomenology allows for the identification of a common phenomenon (Vagle, 2018). Through this study, the goal was to understand the phenomenon, online accessibility, through faculty's lived experiences. Knowledge gained by faculty from their past experiences of support and training received and strategies and tools used addressed the second and third research questions by highlighting potential lessons learned when teaching students with vision impairments online.

As Patton (2015) affirms, phenomenology is a research design that intends to understand the phenomenon of the individuals' lived experiences. Phenomenology does not ask *how* a phenomenon happened, but *what* is its nature. For the purpose of this study, I identified with the IPA approach the most, as it aims to actively analyze and interpret a phenomenon. It focuses on how the researcher makes sense of the participants' experiences through their own interpretation (Smith et al., 2022). As a result, the research analyzes their lived experiences and interpreting the phenomenon never ends (Smith et al., 2022). Consequently, phenomena can constantly shift.

Therefore, the phenomenological researcher needs to experience and live the phenomenon as opposed to just observing it passively (van Manen et al., 2016). Additionally, there is constant engagement to the collected data on the phenomenon, and the intention to further explore and describe it through the participants' lived experiences (van Manen, 2017). A phenomenological study also sheds light on the importance between the language and the intentional focus on the lived experience, or how we explain, interpret and understand the phenomenon. In that aspect, it is close to Husserl's idea of "intentional consciousness" (Vagle,

2018, p. 43). As my goal is to explore faculty's experiences teaching students with visual impairments online, I believe that the phenomenon is and will be constantly evolving, and further research will be needed to continue improving the field.

Researcher's Role and Positionality

First and foremost, as a foreign language instructor, I have always been interested in the field of ADA compliance and online teaching and learning. However, after having observed students with disabilities, and particularly one student with a visual impairment where I work, though not in my own language course, I realized that the needs of this student were overlooked. As a strong advocate for language learning accessibility for all, learning a language is an indispensable asset for all students' future careers, as well as their personal enrichment.

Nonetheless, having accessible language courses particularly in higher education is still a work in progress. As a foreign language instructor and global education coordinator, I decided to focus particularly on visually impaired students who intend to learn a foreign language online. The goal would be to raise awareness on accessibility and inclusive teaching and learning among all faculty, on an ongoing concern that is often overlooked.

One advantage is that I have been a language instructor for ten years, at both two and four-year universities. To my knowledge, I have not encountered students with visual impairments in my courses. Therefore, not having any previous experience helped me reduce potential biases, regarding my own experience and the support I received–or did not–at one given institution. In order to establish a connection with the participants, I ensured the interview was comparable to a dialogue between two language faculty, sharing online teaching strategies and experiences (Ravitch & Carl, 2021). Through this study, the goal was to interpret the

interviewees' raw data as closely as possible, and to invite them to share their perspectives regarding their experiences that were reflected in my results.

Additionally, although some may already have knowledge regarding accessible tools for the visually impaired learners, my dissertation also aims to shed light on recommendations through the exploration and examination of the collected data. Though I have encountered online language faculty with experiences with visual impairments outside of the United States, the perspective of my study was observed from another lens. As universities outside of the United States may operate differently, I chose to only focus on both public and private U.S. four-year institutions to obtain comparable results.

Although I may not have encountered students with visual impairments in my online language courses, my research topic interests resulted from past experiences with visually impaired individuals. As Telles (2000) stated, research is continuously evolving as we add new elements to a particular topic and shape our connections thanks to past experiences, which is how the heuristic research approach was born. Telles' (2000) article resonated with me in that sense, as my research topic directly relates to my passions: language learning, online teaching and learning, accessibility for all, and equipping students with visual impairments.

My first kindergarten friend's mother was fully blind, and I continuously witnessed my mother helping her cross the street, guide her through the classrooms for parent-teacher conferences, through the bakery, the grocery store, etc. Since then, I have had other examples of visually impaired individuals in my life, and I have always tried my best to help them as my mother always did, whether or not I knew them. What really inspired my topic was a visually impaired student in my workplace, a community college, who wished to transfer to a four-year institution. However, she did not take any language courses, and I was interested to find out why

that was, and if she was going to take one later on. This is when I realized that we instructors ought to offer accessible courses to all students from the very first day of class. Some students may not even declare a disability, and then struggle throughout the semester. Therefore, not only have I critically self-reflected on my own online course designs, but also on the accessibility of online language courses as a whole. As such, I believe that our experiences are direct foundations of research questions, which then establish our topic.

It is paramount to know a second language in today's society and yet some people are unable to accomplish this successfully. In my opinion, languages are vital to build bridges between different cultures and to acquire global awareness. Learning a foreign language has always been part of the college curriculum and is often a requirement for all students and for most job positions as well. Therefore, as a language instructor, I am always committed to opening students' eyes and mind to new cultures, on top of the linguistic part of it, to helping them grow as global citizens.

As of March, 2020, my Elementary Spanish I and II and Elementary French I and II courses have been offered in an online format at my institution. Since the spring of 2018, as I was offering these courses in both hybrid and online formats, I have noticed an increased number of students taking my courses in an online format rather than hybrid, due to personal obligations such as family and full-time jobs. In order to promote the field of languages as much as possible, I always ensure clarity, interactivity, and accessibility in all my courses. I successfully worked with the QM standards in the spring of 2018 to improve my course designs on Canvas, the LMS used to deliver my courses. I am aware that around the world, educational institutions of all kinds intend to make physical classrooms ADA compliant. Nowadays, technology plays an important role in that matter and particularly for language courses, there is a variety of tools available for

visually impaired students. Since the COVID-19 pandemic, there has been a more urgent need for the implementation of best online practices and teaching strategies to ensure a smooth transition for online language students. Nonetheless, as limited literature exists on accessible online language courses in higher education in the United States, I hope to make a significant contribution to the field of online language teaching, as well as equity and accessibility.

To manage my potential biases and obtain different perspectives, I received peer review from one other doctoral student, and feedback from my dissertation chair, and methodologist. I also aimed to peer review my findings and my discussion with some of the participants. Additionally, the results were then shared with the participants for member checking. Utilizing member checking and peer review approaches ensured high quality for my research study and my dissertation. As I might have potential biases when it comes to faculty support and training when teaching students with visual impairments online, it was important to reflect on the participants' voices in the study. It was also paramount to point out that as the researcher, my voice is present throughout all parts of the study. However, the goal was to focus on the participants' perspectives in order to fully identify the phenomenon. By including my participants, classmate, and five committee members' input, it has hopefully contributed to reduce biases in my result interpretations and my final recommendations. In addition, reviewing the exploratory notes I took during the interviews and journaling my interpretations as I examined the data I collected, allowed me to highlight participant perspective to better reflect their experiences in my findings.

Protection of Human Participants

In order to protect the participants, prior to conducting the interviews, I submitted an IRB application to address any ethical issues. During the interview, ethical considerations and a

comfortable and respectful atmosphere were established, so participants have felt comfortable sharing their experiences (Ravitch & Carl, 2020). After receiving approval from IRB, I sent the informed consent to the interviewees. Again, at the beginning of the interview, I reminded participants about the purpose of this research and that they may omit any question as they see fit or to withdraw from the study without any penalty. Additionally, it was important to point out that since the participants' identities and institutions were kept confidential, their statements did not contain any personally identifiable information. In the interview transcript, I deleted their names, their colleagues', and their institution names when applicable, as I shared and discussed the results in my dissertation. This avoided any potential risk on their current job positions.

There were no risks that occurred during the interviews. Some participants might have experienced a certain level of embarrassment, particularly when discussing the potential lack of accessibility and the challenges involved in their process of implementing new accessible strategies to their courses. However, as the goal of the research study was to identify potential solutions to allow language faculty to receive training on accessibility design for students with visual impairments, it was unlikely that the interviews caused significant harm to them. Rather, this study aims to further support online faculty. The email correspondences remained in both the participants and my email inbox, whereas the research data including audio recording and transcription remained in the Zoom platform.

In addition, as the interviews were transcribed verbatim, all mention of any name or contact information was deleted, so the interviewees' identities were fully protected, according to the informed consent. Additionally, the consent forms were securely stored in a password protected, UNC Charlotte Google Drive folder, separate from the narrative data location folder.

At the conclusion of the study, all data was destroyed. Using these approaches, the study assured the principles of autonomy, justice, and beneficence.

Furthermore, when conducting interviews, as the interviewer, I always kept in mind that I had the power to guide the conversation, ensure that the interview protocol and questions were addressed in order to stay on track with the overall goal of the study. There was a risk of both interviewee and interviewer to start deviating from the initial topic. As an interviewer, it was my role to redirect the conversation toward the interview questions and, at a larger scale, the research questions. Therefore, I regularly checked and referred to the interview protocol during each interview.

With the growth of online language courses (and any online course), it is paramount to address the issues of accessibility for all types of learners. In this regard, this study intended to be a novel contribution to the literature by focusing on experiences of online language faculty teaching students with visual impairments. Therefore, this study will contribute to the scholarship on implementing accessible online teaching practices, for students with visual impairments in a higher education setting. The goal is to allow for further equity and equal work opportunities worldwide to all individuals.

Additionally, it acknowledges the diversity of student learners, and the accommodation that they ought to receive. Through this study, the goal is to help all language faculty and their four-year institutions to understand the importance of equity and inclusion of their students, as well as gain a positive perception of students who present a disability. Therefore, this study is in alignment with disability studies theories for college students with disabilities, as well as the culturally relevant disability theoretical frameworks.

Sampling

As IPA prefers relatively small samples (Smith et al., 2022), this study sampled a total of 10 language faculty who have taught students with visual impairments online, at several public and private four-year institutions in the United States. When selecting four-year institutions, I looked for those that have a language department which offers more than one language, to increase my chances to find language faculty who may have experiences teaching students with visual impairments online.

I adopted a purposive sampling method by emailing the language department chairs and associate chairs at U.S. universities, in order to inquire faculty's participation by asking them to forward my recruitment email. While conducting my pilot study in particular, I was familiar with the language faculty at that North Carolina university, as I worked there as a Spanish instructor, and am still in contact with the current chair and associate chair among many other faculty. To conduct interviews nation-wide, the goal was to identify faculty who have taught language courses online to at least one student with a visual impairment. Most, if not all language courses have been taught online in recent years as synchronous, asynchronous, or blended courses due to the recent COVID-19 pandemic. Therefore, this appeared to have increased the chances to identify language faculty who met the research criteria. The following table includes important information about the 10 participants:

Table 2

Participant Information Table.

	Gender	Years of teaching experience	Languages taught	Vision impairments of their students	Teaching format	Interview time length
Participant 1	Male	10	Spanish	Macular degeneration and complete blindness	Online synchronously	68 minutes
Participant 2	Female	Over 10	Spanish	Color-blindness	Online asynchronously	63 minutes
Participant 3	Male	5-10	Spanish, Italian	Complete blindness	Online asynchronously	66 minutes
Participant 4	Female	Over 10	Spanish	Partial blindness	Online synchronously	75 minutes
Participant 5	Male	5-10	English as a Second Language	Complete blindness	Online synchronously	58 minutes
Participant 6	Female	Over 20	French, Arabic	Complete blindness	Online synchronously	123 minutes
Participant 7	Female	5-10	French	Complete blindness	Online synchronously	60 minutes
Participant 8	Female	5-10	French	Complete blindness	Online synchronously	65 minutes
Participant 9	Female	Over 10	Mandarin Chinese	Complete blindness	Online synchronously	62 minutes
Participant 10	Female	Over 20	Spanish	Complete blindness	Online synchronously	58 minutes

Overall, it was reported that the majority of the participants taught their students with visual impairments in a synchronous, online format. Most students reported complete blindness, with a few reporting macular degeneration and partial blindness. All participants showed to have between 5 and over 20 years of experiences. Among all 10 participants, two of them reported teaching two non-romance languages, Arabic and Chinese.

The first two participants were present in my initial pilot study. It was conducted in a four-year institution in North Carolina, with a large language department. The eight other participants were recruited in several different states.

The department chairs forwarded the recruitment email to their language faculty and recommended them to directly email me if they were interested in participating. I responded to the faculty who emailed me to see if they agreed to participate in a qualitative, 60 to 90-minute semi-structured interview and if they met the criteria of teaching or having taught a language online to students with visual impairment. Once they agreed, I emailed them the informed consent in a Word document that was signed electronically. Finally, we decided on a common date and time for the interview using the Calendly website.

All participants were able to electronically date and sign the consent form, and return it via email. The participants were reminded of the purpose of the study, that interviews were audio recorded and transcribed using the Zoom transcription and audio recording features, and that they may withdraw their participation at any time. No name nor contact information were shared during the interview. In the event that a name was orally mentioned during the interview, I deleted or replaced it with the mention “name” in the interview transcriptions. Therefore, their identity was protected all throughout the data collection and analysis.

Data Collection Technique

A total of 10 semi-structured, phenomenological interviews were conducted for this study. According to Brinkmann & Kvale (2015), a phenomenological interview serves to interpret a phenomenon according to the interviewee’s lived experience and perspective in the society. Therefore, they intend to focus on the individuals’ life and subjective opinion on a

particular aspect (Brinkmann & Kvale, 2015). All interviews were virtual and were conducted through the Zoom video conference platform.

At the beginning of the interviews, I reminded the participants that the semi-structured interviews were audio-recorded, and the transcripts were saved. Although Zoom automatically recorded the video in the event that the cameras or screens were shared during some of the videoconferences, the participants were informed in the consent form that the video recording was immediately destroyed. They were also invited to review their interview transcripts once I revised them thoroughly, as well as read my interpretations in the findings and discussion section for member checking. Per the IRB protocol, I incentivized one of the participants, as I entered all 10 of them in a random drawing to win a $50 Amazon gift card.

Once IRB approval was received, during the interviews, I reminded them that interviews would last 60 to 90 minutes and, in each interview, I introduced myself and proceeded with the interview questions from the interview protocol, which was beneficial to guide me through the semi-structured interviews (Smith et al., 2022). The interview protocol included warm up questions about their professional backgrounds and their experiences teaching with educational technology. I then asked specific questions about their experiences teaching online students with a visual impairment. The next set of questions focused on accessible technology and strategies they may have utilized. Then, I focused on potential opportunities for faculty to receive support and training. I concluded by asking them for potential suggestions for change, as well as allowing them to make any final comments.

The data collection techniques I adopted in the two pilot interviews were implemented in the eight following interviews as well. The two interviews from the pilot study were also conducted via Zoom. For all 10 interviews, their audio recordings and transcripts were activated

throughout the interview to save them, and the video recording was destroyed immediately as stipulated in the inform consent. The interview transcripts were revised later for accuracy with the audio. Exploratory notes were taken during the Zoom interviews and then revised along with the audio recording.

Both interviews started with a personal introduction included in the interview protocol. Prior to the start of the interviews, as the interviewer, I reminded them of the purpose of the study and the interviews, and the protection of the interviewees' identity, as reiterated in the informed consent that both instructors had previously signed. I then ensured that all explanations were clear so the interviewees feel comfortable sharing their experiences (Ravitch & Carl, 2020). During each interview, on my second computer screen, I left the interview protocol open, in order to stay on track and not deviate from the purpose of the interview.

All interviews felt like meaningful conversations between language faculty colleagues, in both cases. In addition, all interviewees showed a real interest in my study, were extremely supportive and hopeful that the study would be eye-opening for the online language teaching field and the department in charge for students' special needs. My ultimate goal is certainly to contribute to the language field but also to all other disciplines, as online teaching and learning continues to increase.

Data Analysis Procedures

For the data analysis, I utilized the IPA method in order to interpret the participants' experiences during and after the interviews (Smith et al., 2022). To assist me in describing and interpreting the participants' experiences, I jotted down exploratory notes during the interviews. One change that I implemented for the rest of the interviews from the pilot interviews was using peer review. As such, once the interviews concluded, I sent each transcript to all respective

participants to ensure accuracy and to ask them for feedback and potential corrections following the member checking strategy. The goal was also to ensure that they noted the protection of their identity, following the previously signed informed consent. After their review, I then read all transcripts several times and continued to journal and analyze my notes and interpretations. As I returned to each interview transcript, I listened to the audio recording in tandem. When similar experiences were shared by other participants, I made notes of them in my analytical journal (Smith et al., 2022).

To effectively proceed after editing and revising the interview transcripts several times and utilizing member checking, I uploaded the transcripts to NVivo, a qualitative research software that assists researchers in the coding process. The NVivo software color-coded the different codes and sub-codes, and included raw quotes under each of them. Each of these codes gave birth to group experiential themes (Smith et al., 2022), which consist of common themes and sub-themes across all 10 interviews. I reflected on converging findings with the existing literature, as well as new, emerging themes of which I may not have been aware. I thoroughly wrote and rewrote the themes, read, and re-read the data in order to capture the meaning and the language that was used in the interviews (Vagle, 2018).

Lastly, another strategy that I included was contacting the interviewees so they could review the results and data analysis according to the member checking technique. This ensured further accuracy and trustworthiness. Finally, I also utilized peer reviewing with another doctoral classmate, as well as my two dissertation committee members for a final debrief, in order to receive different perspectives on the data analysis and discussion sections to ensure further trustworthiness (Ravitch & Carl, 2021).

Data Quality

For this phenomenological research project, I used van Manen's approach when reviewing my findings (Vagle, 2018). I believe that examining and questioning the phenomenon that was found for the study will help me identify the major findings and identify implications and later propose recommendations and conclusions (Vagle, 2018). According to van Manen's perspective, the data cannot truly nor fully be saturated or only allow one definitive interpretation, as it is assumed that the phenomenon will be evolving endlessly, and that it can always be explored further (van Manen et al., 2016). Therefore, the goal was to find at least 10 faculty to interview all over the United States, to obtain more data and show the potential evolution of the phenomenon (van Manen et al., 2016). Next, according to the IPA approach in Smith et al. (2022), I interpreted the participants' narrative to emphasize their lived experiences on the topic of online accessibility in their language courses for students with visual impairments. As such, each of the presented raw quotes from the interview will be followed by my own interpretation written in the first person, to show active engagement with the phenomenon (Smith et al., 2022).

For each of the interview transcripts, to ensure quality through the process of collecting and analyzing data, I used the data validation strategy of member checking to monitor and understand my interviewees' influence of original thoughts and allow them to partake in the interpretation of their experiences. Additionally, the findings were illustrated with raw quotes from the transcribed interviews, to efficiently document the data analysis. Therefore, utilizing member checking and peer review approaches ensured high quality for this research study.

Limitations

As this dissertation does not focus only on one specific visual impairment, the findings might not be applicable to all language faculty who may encounter students with other visual

impairments in the future. Therefore, the interviewees may have shared experiences that involved students who had different visual impairment types. As a result, it is paramount to differentiate each faculty's experiences and categorize them according to the visual impairment they encountered, along with the various strategies and tools that they had to adopt for each of their students.

Further, as the languages taught by the participants differed, their experiences could vary depending on linguistic variations. Therefore, I organized the data analysis by categorizing faculty according to the language they taught. Additionally, the participants were solely recruited within the United States. Although it might not be a representative study of the entire world, it aims to serve as a novel contribution to the field of online language education.

Summary

This chapter described the methods of conducting a qualitative, IPA study aiming to conduct semi-structured interviews from language faculty's experiences when they taught online students with vision impairments. Not only the information they share may help inform the broader population of language faculty experiences on strategies, training and support, recommendations, and suggestions to improve, but this study intends to also benefit higher education institutions in implementing accessible practices further. In this chapter, I provided a detailed overview of the researcher's positionality, sampling and protecting the participants, data collection and analysis, data quality and trustworthiness, and limitations.

In the next chapter, I presented the findings after I analyzed and interpreted the data collected from the faculty interviews. The raw data was categorized under different themes and sub-themes aiming to identify a common phenomenon. Finally, chapter 5 consisted of discussing

the findings and the potential phenomenon aligned with the existing literature and concluded by sharing recommendations.

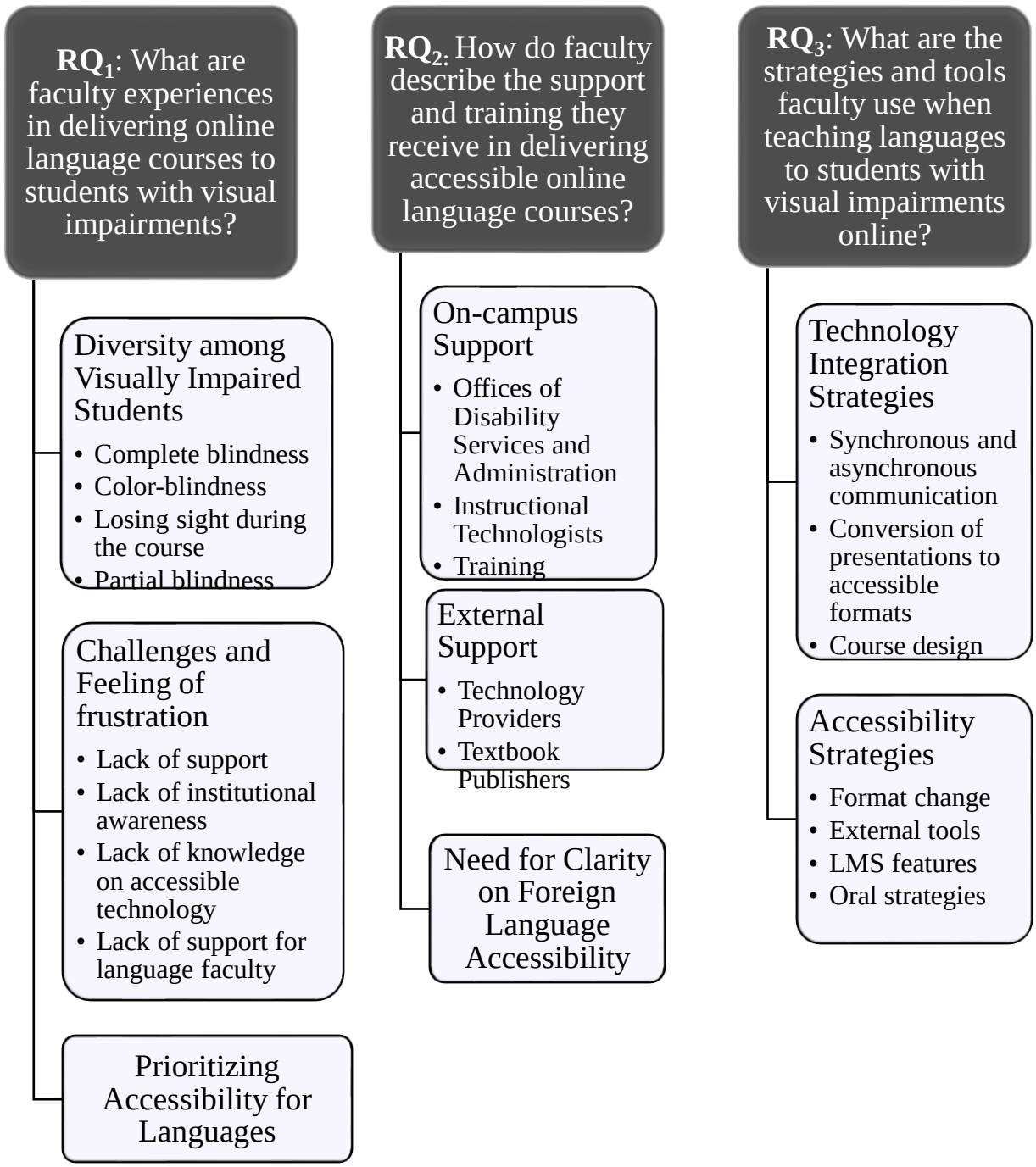
CHAPTER 4: RESULTS

This chapter reveals the results from 10 interviews with faculty who taught language courses online to students with visual impairments. In the first section, I included the results from faculty experiences in delivering online language courses to students with visual impairments. In the second section, I explored how faculty describe support and training in delivering accessible online language courses. In the final section, I presented strategies and tools used by faculty when teaching languages to students with visual impairments online.

Several themes aligned with the research questions, which resulted from the coding process including the themes and sub-themes emerging from the IPA approach, followed by my own interpretations of the interviews (Smith et al., 2022). My exploratory notes and analytical journal were actively utilized and color-coded in three different colors, for each of the research questions and served to illustrate my interpretation and identification of themes and subthemes. The research questions aligned with their corresponding themes and sub-themes issued from the data analysis are summarized in the figure below.

Figure 1

Research Questions and Corresponding Themes and Sub-themes.



Faculty Experiences in Delivering Online Language Courses to Learners with Visual Impairments

The first research question broadly focused on faculty experiences in delivering online language courses to learners with visual impairment. Overall, the 10 faculty participants have been teaching their respective foreign languages for an extended period of time. Some stated, "I've been doing online learning and teaching […] for 12, 13 years", another "for over 23 years between all the colleges,", and one stated "since 2012." A few other participants declared having at least five years of experiences. Overall, as showed in Table 2, participants had between five and over 20 years of teaching experience. Over those years, the faculty were able to develop their teaching skills and strategies for a variety of learners. Thus, the participants' introductions helped understand their backgrounds to determine their level of expertise with both instructional technology and teaching visually impaired students. There were three themes identified which included: visually impaired individuals, challenges and feelings of frustration, and prioritizing accessibility for languages.

Diversity among Visually Impaired Individuals

The first theme that emerged described the visually impaired individuals that faculty participants had in their courses. They were compiled as the following subthemes: complete blindness, color blindness, losing sight during the course, and partial blindness.

Complete Blindness

A salient subtheme for this section was complete blindness. Eight out of 10 faculty who were interviewed had students who reported complete blindness while taking their classes. For this subtheme, the majority of the participants stated they had students who reported complete blindness. One participant noted having students with visual impairments was not a new

experience for them, as they already had previous experiences with visually impaired individuals. They stated: “I had a lot of experience. I knew how JAWS worked; I knew how screen readers worked.” He was familiar with the students’ needs, as he explains “when the students that I started to interact with started to encounter difficulties, I kind of had a sense already of what it is on the student side.” Having previous experiences with visually impaired individuals helped the participant have a broader idea of how to support the students.

Color-blindness

Two faculty participants mentioned having students with color-blindness. One participant stated to have had a color-blind student and mentioned if they knew from the beginning of the semester that students identify themselves as such, accommodating them may have been easier. As they confirmed, color-blindness is not considered a visual impairment for the disability office. Therefore, they noted if the student disclosed that information, “it will help me just not to have the colors, but also create forms, or create other avenues.” As they explained, they use color markers in order to explain grammar, however not all students may be able to perceive that.

Their affirmations lead to a similar conclusion than the eight participants who had students with complete blindness, in the sense that having previous experience with visually impaired individuals makes the process of ensuring accessibility smoother. Another faculty member stated to have a color-blind student. However, it was only after the semester had started that the student disclosed that information to them, as color blindness was not recognized as a disability. They stated, “I think the students that couldn't see colors were in disadvantage, versus the students that could see the colors, and answer my question […] And so, the conversation came about, “well, I don't see colors.” Therefore, the participant was aware of the potential accommodations that may be needed, and made on their class materials, and they started asking

whether everyone in the class were able to see colors at the start of the semester. By communicating with their students, they were able to identify their needs to succeed in their courses. They also noted that, “sometimes, students don't realize that it is a disability, or it's a disadvantage, more than a disability, it’s a disadvantage. And because they haven't realized that, they don't know how to advocate for themselves with their teacher.” Therefore, identifying them at the beginning of class and, in the case of the second participant, using color markers and asking students whether they were able to see them, helped the participant “test the water” to see if all students in the class had equal capabilities. Therefore, they posited there are further conversations to be had at the university level. She noted that K-12 level had more accommodations in place for students with vision impairments and other special needs, which should be the case at the university level. As such, universities should be more proactive in assisting students in need and encourage them to disclose their difficulties in accessing the course material when necessary.

Losing Sight during the Course

As for another faculty participant’s experiences, the student started losing their sight over the course of the semester: “one of the students, I don’t remember if it was macular degeneration, but one student had… significant visual impairment when she started the program.” Therefore, this student started to lose her sight in graduate school, after having obtained several degrees in the past, when being fully sighted. As such, significant adjustments had to be made to be successful in the class: “she was just learning how to navigate being visually impaired.” The faculty was aware of the student’s situation, which helped them identify the student’s needs further.

Partial Blindness

Another faculty participant reported the student also had another type of visual impairment “but was not fully blind.” As such, in this student’s case, the visual impairment already existed since their childhood. As a result, the student was able to advocate for themselves and explain that to the faculty, which calls for thorough communication with the faculty from the start of the semester. Therefore, the faculty displayed proactivity and previous knowledge to successfully request accommodations to the disability office. Nonetheless, foreign language support was scarce in terms of accessibility. One participant mentioned their student could “see colors, shapes and shadows and had an apparatus on [their] computers that would make the screen bigger” in addition to a cane and a guide dog. A student who may already be equipped is able to inform faculty from the start of class, which seemed helpful to find alternative course materials tailored to their needs. Therefore, all participants interviewed had students with a variety of vision impairments. Allowing students to precisely explain their impairment would bring more awareness, and the participants wished to have known more.

All 10 participants requested their students to explain their visual impairments as they were not familiar with their particular needs to succeed in the class. For instance, one explained their student had a tunnel vision,” comparable to “seeing through a straw.” Faculty were knowledgeable about their students and able to describe their exceptionalities, which appeared necessary for the sake of the interviews. Overall, participants had students with varying types of visually impaired students in their online language classes, which led them to thoroughly communicate with the students in order to describe their own situations and target their needs more precisely.

Challenges and Feeling of Frustration

The second theme that emerged on faculty experiences in delivering online language courses to learners with visual impairments was challenges and feeling of frustration. The faculty participants interviewed had several challenges. They were labeled as subthemes and included: lack of support, lack of institutional awareness, lack of knowledge on accessible technology, and lack of support for language faculty.

Lack of Support

A challenging aspect of teaching students with visual impairments in a language course that was reported by nine out of 10 participants is that there is not a lot of support available for the professors. One of the participants affirmed, “I don't often ask them to help with things because I can do it myself. I don't think I should have to be doing it by myself, but I have not found the resources sufficient to make it easier for me. [YouTube’s] tool is nice. I can upload a video and get like a first pass on some stuff and if I'm doing it in English, that's great.” Another participant stated that “it’s not the lack of will, it’s just the lack of opportunity and time.” In the case of the faculty who taught a color-blind student, lack of time was salient, as they had to re-create her entire course materials by using different font, as opposed to different colors, to ensure fairness for the student. Therefore, it was additional work that fell on their shoulders alone, and they were forced to come up with a solution on their own and did not receive further support for any other campus departments.

Another faculty respondent reported that, “I never really got anything from disability services on what to do. Just, “here is a piece of paper, here is what the need,” without further guidance on the specific accommodations that the students would need. At a few other institutions, participants reported that the office of disability service would not communicate with them ahead of time on students’ disabilities, which showed a disconnect between both

faculty and accessibility professionals. As a result, information and guidance are lacking across universities, which was a concerning issue to the faculty respondents.

Lack of Institutional Awareness

Another challenge identified by one of the participants was the lack of awareness from the institution as a whole. When teaching a language, not only are there written components, but also oral ones. Therefore, captioning everything for the student understandably defeated the purpose of providing them with listening and interpreting assignments in the target language. One participant stated, "if you're taking a Zoom class, and you have subtitles on, in a foreign language, it does not do it!" Another reported "I've never heard the screen reader in the foreign language. So, I don't even know what it's saying to them when I have instructions in Spanish, or Italian, or French." The lack of resources for foreign languages confused another participant, as captioning should not be a proposed solution for every task: "I always find myself going like, do I have to provide [the office of disability services] a training, or if I give them a test that is an oral dialogue back and forth that they're interpreting, they said well you need to have a transcript. And I'm like, now I can't test them on what I want to test them on." The faculty did not feel heard, as no solution of alternative format or task was offered to their students. Unfortunately, this lack of awareness from the institution provokes a feeling of frustration from the faculty, which constitutes an alarming issue in and of itself. Those faculty respondents wished to have further training and guidance from the office in charge.

Lack of Knowledge on Accessible Technology

Faculty participants unanimously reported scarcely knowing about accessible technology. As one of them stated, "it's challenging because students are able to use technology, but they are not able to learn through technology […] so there's a lot of explanations that needs to happen,

and there has to be communication." Therefore, students need constant communication with the instructor to be successful and use the technology tools appropriately. Faculty also expressed their limitations as far as the technology is concerned because they do not have access to accessibility resources to help them assist their students. As one of the participants noted, "I don't know how that works with screen readers, and like texts if they're being digitized and, if you have like a book that they're digitizing a chapter for you. I don't know if they're doing it in a way that actually supports the foreign language reading." As a result, faculty did not have the sufficient knowledge on accessible technology. Faculty show moments of uncertainty when the semester was well underway. This is preoccupying for both faculty and students.

Lack of Support for Language Faculty

There is an explicit lack of accessibility support in foreign language courses with online components. It was previously revealed and becoming more obvious throughout all interviews. For instance, when a participant explained that they asked for the instructional technologists help in captioning in a foreign language other than English, they noted the following: "[they] are like 'well we can hire somebody' and it always feels like an annoyance to them," as he was requesting assistance from the disability office. Another statement made to him was, "they say, well you know, you can just do it." However, he noted when other faculty request captioning support in English, instructional technologists say: "just send it to us, we'll put it through an automated caption, or we can check it, we can do all of this." He continued "when we get into languages other than English, all of a sudden now it becomes my responsibility as a faculty member." Therefore, not only is there a lack of resources within the four-year institutions where the participant works, but also little effort to overcome or advocate for the need of foreign language accessibility support. Resources such as a language specialist or a translator may be a

helpful addition to provide accessibility in different languages. Faculty show great frustration when communicating with different stakeholders.

As such, there is a tendency from accessibility specialists to delegate the task to the language faculty when it comes to offering accommodations to the students: “I do find it frustrating that we don’t have the same type of support, and the response is often, “well that becomes your responsibility then.” The participant also mentions when they asked questions regarding accessibility in a language course, they are unable to help. Therefore, not only does it create additional challenges for the faculty within the semester, but it also shows annoyance. Although the faculty attended training session on their own such as the QM training, they were surprised and disappointed that they were unable to receive appropriate assistance to their requests. Therefore, the faculty seems hopeless in regard to not receiving the appropriate assistance they are requesting and their students are in need of. With a nervous laugh, they expressed: “I feel like I fight the good fight, but I just hate the fact that I don’t feel like I’m going anywhere.” All throughout the interviews, participants revealed their will to support their students and give them the opportunity to learn a foreign language successfully to the best of their capacity. However, it was not before the semester had started that such challenges appeared, and the overall lack of awareness of the institution was salient and frustrating.

Prioritizing Accessibility for Languages

The third theme was prioritizing accessibility for languages. This focused on lack of support for language courses and need for clarity on foreign language accessibility. Providing further accessibility training for all faculty was unanimously mentioned by the participants. Participants are unaware of the available tools, because of the lack of accessibility knowledge and time to become more acquainted with accessible technology.

One faculty participant affirmed “Here, I know that there's some training available. I know the training is of variable quality, depending on the day and the time and the person.” Training sessions should be created and promoted to the entire institution. However, as the participant noted, not all faculty will participate in the training sessions if it is not labeled as required. Accessibility training should, however, be required to all faculty to not wait until the first day of the semester to address alternative course content. Nonetheless, there is an important need for faculty to be able to accommodate students and to be educated on the different solutions available to them, depending on the type of visual impairment that the student might report. Additionally, another participant wishes to receive further training on other tools that all faculty may find useful. Often, some may already be implemented but without guidance, faculty appear confused and unaware of their existence.

For this theme, it was noted that when teaching students with visual impairments, there was a tendency of relying on their previous knowledge and/or requesting support themselves. In the institution, the faculty respondents are the ones who would take initiatives proactively. It was also reported that, not only the faculty but also office of disability services, instructional designers or the higher administration lacked accessibility knowledge. However, training on ADA compliance does not seem to be in the forefront. Third-party providers also seemed to be lacking accessibility knowledge, as a few participants mentioned textbook publishers did not always have the textbook materials ready for faculty. Therefore, every stakeholder involved in higher education online language courses call for further training and support.

Training and Support in Delivering Accessible Online Language Courses

The second research question focused on training and support in delivering accessible online language courses. As such, on-campus and external support and need for clarity on

foreign language accessibility were themes that were identified as important for delivering accessible online language courses. As the results show, existing support was overall scarce, as only four participants shared and described existing training and support for this section.

On-campus Support

Among the existing support reported by some participants, a few recurring stakeholders from their respective institutions were mentioned in this section. Some of the stakeholders included campus employees, such as those of the office of disability and higher administration, as well as instructional technologists. Additionally, the need for training was mentioned by the faculty respondents.

Offices of Disability Services and Administration

A participant reported they had "a few consultations with the office of disability and the people who are supporting the student," and concluded "at my institution, admin loves to talk about how important it is, and that they're doing it and then you look at the people doing the teaching or the kind of learning and it's not that way at all." As such, support may be present but, in the practice, it may not be widely available in the institution. The rest of the participants did not seem to have had many interactions with disability specialists in their campuses. Similarly, a participant stated "once the top administration, I'm talking regents, presidents, you know, Dean, like chancellors, get on board with that idea, that simple, tiny procedures that are implemented pervasively throughout an entire system and program will impact positively 100% of their population, I think they would see that it's worth the effort and financial resources that it's gonna take to do teacher training." ADA compliance should become a priority for the institution as a whole. Not only the disability service people, but also the upper administration and other campus educators should urgently address the lack of accessibility.

Instructional Technologists

Talking to other stakeholders such as the instructional technologists may be fruitful, as one participant stated, “They digitized all of the readings for the students, or made them available in, they either made them screen readable, or they might have even done some audio recording for them.” Once again, only one participant reported assistance from instructional technologists or equivalents. However, in other instances, there was a lack of knowledge from the instructional technologist standpoint, as the advice given to the participant appeared to be ineffective for foreign language courses: “I don't know if you've ever tried to do automatic captioning in a language other than English, but we call them ‘crap-tions.’” Although they did not receive proper accessibility training, it seems as though the most helpful solution for this faculty was to have thoroughly communicated with their students to understand their needs. Nonetheless, in an online language course, it falls on the faculty’s responsibility to take the time to contact students one-on-one and invite them to share any concerns they may have.

Training

Lack of accessible technology knowledge would require language faculty to receive further support and training from their respective institutions. Participants expressed unanimous concerns regarding the lack of mandatory training for online, accessible resources, and even meetings with special service professionals on campus: “there’s no formal day or meetings […] and if they are held, they’re not held with the professors, just to be clear.” Once again, this faculty respondent confirms that accessibility is not a priority. In many institutions, training was available but not required. In addition, the lack of knowledge when it comes to screen readers and other tools students may already have available is salient, particularly when they need to be set in a different language than English.

As those interview responses show, all participants are truly willing to advocate for further accessibility in online language courses. However, there is not enough help and support provided by the institution, or even outside entities such as the QM training. Faculty may be attending these sessions; however, it is not widely promoted. Therefore, they are still isolated and unable to collaborate with other stakeholders to better serve their students. Providing training on the importance of compliance as opposed to truly meeting individual students needs does not seem fruitful to the participant. He seems frustrated that there are no solutions directly proposed to help students and highlight the overlap between visually impaired and orally impaired, especially when it comes to interpreting a language.

External Support

Outside of campus support, a few participants also mentioned other stakeholders that appeared to have been helpful to adapt materials for students with visual impairments. Those included technology providers and textbook publishers.

Technology Providers

For participants who already had previous experiences with individuals with vision impairments, they were able to identify some existing resources, for instance using JAWS and the translation software. One participant was able to directly contact the developer of JAWS and ask several questions such as: “Are you ADA compliant, or do you integrate with screen readers, do you do some other stuff? And fortunately, JAWS could play nicely with the software.” Therefore, the participant was proactive and was able to advocate for their own students. However, this represents a minority across all the interviews, as several of them are unaware of the external technology tools available.

Textbook Publishers

Another solution proposed by four participants was to contact the textbook publishers: "they were able to, to get electronic versions from the publisher for some of those things, because we knew the authors, we could actually get accessible things ourselves." Communicating thoroughly with the correct stakeholders in charge of providing assistance should be on the forefront to improve course design. Relatedly, one faculty respondent mentioned the publisher's role in providing faculty with more accessible materials. They suggest, "They always give you PowerPoints but it's like, what about some audio files? And actually, the publisher did have links to some websites, but they were broken links. They were outdated, and the book wasn't even that old." Therefore, an existing priority would also be for third-party providers such as textbook publishers to collaborate and provide faculty with materials of diverse format to serve a larger population of students. Additionally, there appears to be confusion on whether faculty, or textbook publishers should request the accessible material first while ADA compliance is a legal requirement.

Need for Clarity on Foreign Language Accessibility

Another theme that came across was the need for clarify on foreign language accessibility, as the participants discussed all captioning needing to be translated from the foreign language into English. However, as the participant said, "the goal is to engage with authentically written texts in the foreign language. So, providing a translation defeats the purpose, because we know students are not necessarily going to use this, they're not going to engage with Spanish." The participant would like more guidance, more understanding, and also to be heard. In a language course, the learning outcomes are not to translate certain assignments to the original language, particularly in a more advanced language course. It felt that their request was not taken into consideration and no solution was offered. The participant seemed to

have several questions unanswered, which confirmed the feeling of frustration for not receiving further guidance in this matter.

Misunderstanding of an assignment's purpose also occurred when requesting assistance. A participant explained they ran into this issue with the disability specialists. They feel like a burden, even if the participant wishes to receive further guidance on captioning in the foreign language: "I work with accessibility and subtitling and things like that, like I'm already kind of aware of some of it." However, it is not enough to support students with visual impairments, in particular, as the screen readers or other software may not have that functionality. This frustration was salient with another participant, as they did not receive a viable solution to make the assignment accessible to their visually impaired students. Therefore, accessibility is needed and should be further prioritized.

In summary, all 10 faculty respondents had several years of language teaching experience: two of them had some with vision impaired individuals and two others, with other impairments that involved accessibility measures. However, six other participants did not have such experiences. Despite the years of experiences with language teaching and online accessibility, there was a general feeling of unpreparedness in assisting students. The participants also reported a general lack of accessibility and ADA compliance awareness from their respective higher education institutions as a whole, but also with the office of disability. Particularly when requesting assistance in providing accessible materials in a language other than English, the office failed to provide tailored accessibility solutions for online language course materials. As a result, the responsibility fell on faculty's shoulders who promptly felt unprepared, frustrated, and overwhelmed.

Particularly for language courses, additional training and availability of materials in foreign languages is lacking, despite the availability of CALL and ICT. Additionally, providing clarity and support to language faculty may help them increase awareness on the importance of accessible materials for their courses, so they become familiar of available tools and learn to use them in any given situation.

Strategies and Tools to Teach Students with Vision Impairments

The third research question focused on strategies and tools for teaching learners with vision impairments. When teaching students with visual impairments online, it is salient that more awareness is needed on which tools exist, and which to utilize in specific contexts. Several participants mentioned having taught different types of online languages classes, such as "asynchronous," "synchronous," and "hybrid." One mentioned being "a firm believer in distance education, way before COVID." Technologies supported the different teaching formats. The themes that emerged for strategies and tools included technology integration strategies, and accessibility strategies.

Technology Integration Strategies

Technology integration strategies included three subthemes. They consisted of: course design, converting presentations to accessible formats, and synchronous and asynchronous communication.

Course Design

Eight out of 10 participants appeared confident and comfortable using technology. One faculty participant added "it's always changing […] new tools are all the time coming up." Nonetheless, they seem eager to learn more. The two other participants mentioned they felt fairly comfortable and were always open to adapt themselves, and include technology tools in their

courses, when learning about new ones. It was unanimously noted faculty need to stay up to date with technology tools in order to integrate those tools to their courses. As one participant noted, "[tools have] to be very carefully implemented, otherwise students on the other side feel overwhelming." To better support and serve students, technology must be carefully selected in order to be implemented effectively. For instance, it was found that although the Kahoot! may be an interactive solution, it would not be appropriate if a student lacks color perception: "there's not something that can change the tone of the color for them on their computer so I gotta have everything on one tone."

Converting Presentations to Accessible Formats

In terms of accessible format awareness, Google Slides was also not recommended for students with impairments or students who are not familiar with technologies, as "there are a lot of like, very small buttons on the screen." Thanks to having communicated with their students, the faculty was able to counter that issue. Therefore, it was not easily readable by the screen reader, and it was more effective to convert the slides into PDF files. As noted in all interviews, there are many affordable online resources for students with vision impairments. Nonetheless, as a participant stated, accessible courses should be seen as more than only adding tools after tools. It was salient that existing tools could already be helpful, once training is provided on it. As such, omitting certain assignments as a respondent suggested may be more meaningful to students. By omitting or substituting assignments, this contributes to tailor the course materials to a wide array of learners. It seems possible to design accessible materials using the wide variety of accessible tools and implement strategies and accommodations in addition to them.

Synchronous and Asynchronous Communication

Two participants focused on different instructional technology strategies which may already be available in their respective institution. For instance, when having a visually impaired student in their classes, a participant mentioned having "changed the way [they] wrote emails and communicated with people." As emails are the prominent mean of communication in today's current educational setting, the faculty respondent seemed satisfied to explore the way email communication occurs. Additionally, there were new aspects of instructional technology that participants were able to explore and learn more about. Another participant mentioned helpful tools to improve the students' practice of the language: "iMovie," "Padlet," "Stella," "Book Creator," "Flipgrid (now renamed Flip)," "Zoom," "Google Classroom," and "Panopto" were a few of the recurring tools for two of the participants. Quizlet was utilized to include vocabulary chapter to be broken up into smaller units, so students could easily access them. Two participants revealed it was a useful resource to better help students distinguish different, new expressions. Similarly, PowerPoint appeared useful when few words per slide showed, as it allows faculty to break down the materials and having for instance, one expression per slide. Word documents were preferred for homework or readings. In addition, when one faculty had to switch from a hybrid to a fully online format for her class, they stated, "Grammar is extremely heavy in the second year of Spanish, and that requires a lot of attention, and if it's online, in a platform, you need to be resourceful because not everybody might see the same thing." Overall, there may be existing tools already available for faculty to use and explore, so they can further assist their students.

In a different institution, another participant stated there was great technology support that allowed them to offer more audio materials for students who may not be able to view the materials, such as playing with the tone of voice as a part of it. Therefore, they wish, "from a

technology point of view, it will be very cool to […] have options in terms of color and forms, or even sound." Therefore, for the technology support to be complete, working individually with the faculty member may lead to more fruitful and fast solutions to overcome the challenge of offering accommodations, sometimes in the midst of the semester or unprecedented situations. Sharing solutions to other faculty and departments on campus could allow everyone to brainstorm with other stakeholders who face, or have faced, similar challenges. It could be done by organizing a session or a meeting. The faculty seemed confident and stated, "there are other things that we can do that we would do better if we know them" to improve faculty's teaching experiences.

Another faculty participant mentioned that synchronous online language teaching first occurred in March 2020, at the start of the COVID-19 pandemic. They seemed to easily adapt to the new online format and enjoyed teaching their visually impaired students synchronously. A participant also shared their student with visual impairment "loved Zoom. On Zoom it's easy, you have control of the integration, the technology allowed us to actually be in control, because I can mute everybody and let him speak." They explained, "In Zoom, I pinpoint very clearly and enlarge to show them something, then go back and point to it, and everything, it's amazing." Therefore, there is a wish to further utilize technology tools to improve the language learning experience, as well as exploring accessibility topics and collaborate using them to receive further insights. Videoconference platforms like Zoom could help language faculty with visually impaired students, which showed hope in making synchronous classes more accessible.

Email Submission for Assignments. Several participants also reported students found it helpful to submit their homework via email, as well as receiving reminders for them. It seemed like emails are more readable to visually impaired students' devices than using LMS inbox to

communicate with their instructors. To effectively utilize email communication, a participant suggested the following: “we try to include the date, exact date and the content of the homework in the title.” Email communication seemed to be the preferred mode for visually impaired students, and it also may help other students in the class to successfully communicate with their instructors. Therefore, two participants shared this solution as a successful one.

Advocacy and Empathy. A faculty participant who themselves had a hearing impairment concluded “folks with disabilities, we can do the work. We, by default of being neuro-divergent, by default of being so independent that we've gotten this far in life on our own, with our disability, means that I already have overcome probably more than you have.” When previous experiences with either their own, or someone else having an impairment, the participant was able to appropriately advocate for their students. By showing empathy and establishing clear communication between the student and the faculty as well as other campus entities, faculty will receive a more thorough teaching experience and understand how to target needs for the different types of learners in their courses.

Accessibility Strategies

The participants reported many accessibility-specific strategies that could be implemented with their online course materials. They were labeled as format change, external tools, LMS features and oral strategies. Depending on the higher education institution, those resources may be readily available to faculty respondents’ courses.

Format Change

In each of the following strategies, two different participants recommended the following format changes that made the most different for their respective visually impaired students.

Avoiding White Space. One participant mentioned students using screen readers preferred course content with as little additional spacing as possible. As a strategy, it was suggested to "make the titles bigger and delete useless space" in written documents, as it seemed to not be convertible by a screen reader.

Accessible Fonts. One faculty participant included accessible font such as "size 14 Verdana. It is easier for them to read." Similarly, another important strategy one participant pointed out was changing fonts, instead of color-coding grammar concepts: "if you can't see colors, you at least can see underlying, bolded, different fonts will just convey." They noted that the student in need of this accommodation performed "equally or better, in terms of knowing the grammar." Therefore, successful results were drawn from this strategy, despite the large amount of work that the participant noted. Another recommendation was to provide students with a "very short assessment of students' abilities at the very beginning of the course." For instance, they give the example that students could be invited to indicate whether there are certain fonts they were not able to identify. As a result, it would allow the faculty to anticipate the way they present their course materials to students each semester, especially when facing a visual impairment which may not be considered as such by other campus entities.

Using Alternative Text. Another accessible resource that a participant mentioned was alternative text for images. However, they wish to know how to use it in the best of their abilities. They mentioned needing further training on how to effectively describe visuals within the course content. As no other participant mentioned having utilized this solution, it is paramount for universities to receive more guidance on how to appropriately use alt text.

Accessible PDFs and Books. Regarding accessible PDF documents, another participant recommended the following: "buy an electronic version from the book, then make it available to

the entire university community that I can link to, so that we can then have our software already engaged and work with it. And don't forget about foreign languages!" Another participant stated accessible textbooks were provided by the publishers when requested. Depending on the institution, accessibility specialists could sometimes request them for the faculty and in other cases, the faculty had to request them. In all cases, foreign languages are not to be put on the back burner as accessible materials are indispensable for students to engage in the target language.

External tools

As the majority of faculty respondents reported having taught students with complete blindness, several tools pertaining to either complete blindness or macular degeneration were shared. These tools were not readily available by the institutions. However, sometimes students already possessed the tools on their personal laptops and mobile devices.

Braille Translator. Eight of the participants reported having taught completely blind students. For these individuals, Braille Translator was suggested by two participants to be a useful webpage. This device was used to convert video transcript or other materials into Braille.

Use of Duolingo and Additional Websites. Duolingo revealed to be accessible by a few participants whose students were completely blind. "They quickly got way beyond," one participant stated, as it seemed to be a complement to course contents and allowed students to further their interpretation skills. In their Chinese course, the faculty participant shared resources such as websites "showing the difference between formal and colloquial Chinese, and like special terns for business Chinese." Another website with audios and videos for students to listen to and have access to meditation tools in Chinese "tailored for different levels" were incredible resources, and fully benefited a student who reported complete blindness. Therefore, external

websites already design for different types of learners may already be effective. Sharing resources widely among other faculty through lunch and learn, or training sessions may be a fruitful way to disseminate resources.

Transcripts and Captions. As three participants previously mentioned, YouTube videos and Zoom transcripts include captions but will have to be carefully revised: “I have to go back in and edit, and, you know, leave stuff out. But I thought maybe on Zoom or something, it would give a better… and it just didn't, unfortunately. It came out all gargled.” Therefore, when a lesson is recorded as mentioned by several participants, it is paramount to revise the transcript before making it available to the students. Visuals were suggested as long as the instructions “make sure images have captions” for further accessibility. Nonetheless, faculty seemed confused on how to proceed, and the lack of time to create these resources was also another barrier.

Use of Screen Reader. On the other hand, another participant mentioned their student was not aware of the support that she needed, as she started to lose sight over the course of the semester: “she knew that she needed the screen reader, but I don’t know how aware of everything that she needed, was.” Therefore, communicating further with the students may be the best way to understand what they already have access to, and what else they would need. Depending on the visual impairment type, different tools and accommodations can be put in place for the students. Indeed, as noted in all interviews, accessibility is not a one-size-fits-all initiative, and it needs to be adapted to each student depending on their visual impairment.

Increasing the Screen Resolution. An important aspect of teaching is acknowledging and adapting teaching strategies for the students in need. One participant did this by explaining: “I would increase my screen, focus it on something specific, so she could have a better, a clear

view of exactly where it was at." It is paramount to identify the degree and type of visual impairments prior to the start of the course, so accommodations can be implemented accordingly.

LMS features

Three participants mentioned two different features that can be found in the Canvas and Blackboard LMS, which is utilized in their current institutions. They could serve as a model for other faculty, as LMS were used by nine out of the ten faculty respondents. They included checking for accessibility within the LMS platform, using the HTML format, oral strategies, transliteration, oral descriptions of course materials, as well as adopting different tones of voice.

Checking for Accessibility. Additionally, the Canvas LMS also has accessibility checkmarks for materials, as a participant noted: "you click on something, it checks for accessibility. But it's not color coded like that. It would find things like an image that didn't have a caption." Faculty can then use the findings from the accessibility checker to make their course accessible. This would allow them to request further guidance if their materials need to be reviewed.

Using the HTML Format. This strategy was suggested when uploading course materials. Other features may already be included in the university's LMS such as "typing everything actually on Canvas, in HTML format." Materials can already be created in HTML format and embedded in the course shell. Another participant suggested HTML format on the Blackboard Learning Management System as well, which may aid faculty designing their courses accordingly.

Oral Strategies

In language courses, the oral component is paramount to learn a language. Particularly for visually impaired students, this component may be enhanced by the following strategies to allow them to learn more effectively. In this section, three participants suggest strategies for Mandarin, Arabic, and Spanish languages.

Transliteration. Another solution recommended by faculty participants was utilizing transliteration, by showing students how to pronounce the word phonetically: "It's like pinyin in Chinese." Relatedly, when teaching Mandarin Chinese to a student with complete blindness, they noticed one of the participants could "transcribe everything into pinyin with tones. So, she can read all the text and sentences given by teachers using Doc or software on her computer". Therefore, other solutions were found for languages that do not mainly use the Latin alphabet: "Chinese Braille will also use the English letters. But we have different component of, like… so we can combine different like, finals and initials together to make the whole process easier. So, for example, if I want to type pang, I don't have to do P.A.N.G. one by one, so make those 2 parts: -P, and then -ang: Only 2 parts." The faculty reported their student was successful when using this method and focusing on the listening part as well as the speaking part. Interestingly, these strategies were proposed for languages that do not use the English alphabet. Nonetheless, other languages may benefit from transliteration through explaining roots of words coming from Latin or Ancient Greek for instance and connecting them with the original language.

Oral Descriptions of Course Materials. In a synchronous class, providing oral descriptions of either new vocabulary or course materials is undoubtedly indispensable for students with vision impairments. As another participant reckoned, students with no vision impairments also benefited from it. Particularly in a Mandarin Chinese course, the faculty respondent suggested translating an audio from the target language into English. To aid the

student building a visual idea of the Chinese character, they suggested the following: "[The student] will learn some cultural information about the Chinese characters. So, for example, she knows that we have a character, which means tree and then we add that character. It then becomes a character that means forest, where the left part is the tree character, and then the right part is also the tree character. So, 2 trees come together and make a new character, which means more trees, which becomes a forest." Learning cultural aspects of the language was reported by another participant to be fulfilling as they progress in their learning journey. Those solutions seemed effective as the student successfully became proficient in their languages, which seemed to have given hope that accessibility is doable and available.

Tone of Voice. Another strategy found by a participant was using the tone of their voice when teaching particular verb tenses in Spanish: "When you're using subjunctive, you have that mystery voice. It's not a fact. So, you can start being playful." Using the voice to explain and compare verb tenses also appeared to be a successful strategy for the student to better grasp the differences between, for instance, the indicative mode used to talk about fact, and the subjunctive mode used to talk about hypothetical situation. Similarly, a participant stated: "I was verbal about everything. So frequently, if those of us who can see well, a professor, teacher, or instructor can refer to something, or we can point to it and talk about it." The orality in the language course was more present than ever. Having a vision impairment will allow students to develop other skills such as listening and speaking. In a language course, orality is paramount. Therefore, utilizing and exploring it further for students with vision impairment is fulfilling and proved to be effective for students to successfully grasp the language. It may also be beneficial for other students in the classroom, as they practice their listening and speaking skills similarly.

To conclude, all 10 participants expressed feeling comfortable with technology integration to their online language courses. Nonetheless, they were unsure of any available tools for visually impaired students with color blindness, partial blindness, or macular degeneration. In addition, although there are several existing strategies and tools for completely blind students, the lack of implementation and targeting students' particular needs was once again, salient. Nonetheless, various tools and strategies were shared by the participants which may assist future language faculty and could undoubtedly apply to other disciplines with online components.

Summary

Upon thoroughly analyzing these interviews, findings revealed the 10 faculty who were interviewed had several years of online language teaching experiences. They reported students with mostly complete blindness, but also partial and color blindness, as well as macular degeneration. Overall, through the respondents' experiences, it was revealed that by communicating with the students, they were able to implement strategies to fulfill their students' needs, according to the languages they taught and their unique particularities.

However, in regard to training, the participants shared they were lacking resources in the target language, as well as on accessibility for vision impaired individuals. Although five participants reported having experiences with individuals with disabilities, they sometimes felt frustrated when their institutions demonstrated a lack of support and training awareness. Mandatory training for all faculty was suggested by eight participants.

Additionally, all participants noted there needs to be more focus on foreign language courses, as the goal is to teach in the target language for the students to learn it. Although all faculty were willing to advocate for their students and respond to their needs, they affirmed collaboration with other stakeholders on or off campus is paramount.

CHAPTER 5: DISCUSSION

In this chapter, I aligned the study's finding with the research questions and the existing literature as it relates to the emerging themes. Throughout this study, I analyzed the participants' experiences with visually impaired students in online language courses at different, U.S.-based, four-year higher education institutions. Through this, I offer other language faculty different perspectives and strategies to design high quality online language courses.

Faculty's Experiences in Delivering Online Language Courses to Learners with Visual Impairments

Faculty's Varied Years of Teaching Experiences

First, it was noted that all the faculty respondents had several years of language teaching experience and have taught at least one visually impaired student. In previous research, Lamichhane (2017) stated that faculty who have been teaching for a longer period of time would be more inclined to implement new teaching strategies for students with vision impairments in particular. However, in this study, eight out of 10 of the faculty respondents had limited experience with online accessibility for vision impairment students despite having several years of teaching experiences. Two respondents reported that having previous experience and knowledge on visually impaired students was helpful to effectively support the students. In fact, two participants mentioned that although they only had one experience with a student with a visual impairment in the past, they themselves had experienced another type of impairment or a loved one with an impairment. Nonetheless, this may not represent the majority of the faculty.

Diversity among Visually Impaired Individuals

While all faculty respondents were aware of their students' vision impairments, one of them responded that their student reported color-blindness after the semester started. In their institution, it was stated that color-blindness was not considered as an impairment, therefore at the beginning, neither student nor faculty knew how to best serve the student's need by providing accessible and color-free course materials. As no training was available to the faculty at the time, they had to research accessible strategies on their own. In their study comparing practices from different universities in the United States, Canada and Spain, Lombardi et al. (2015) showed that often times, faculty are either unaware of having students with disabilities in their classes or lack training in that aspect. This is contradictory to the findings in this study where faculty respondents were all aware of their students' vision impairments. However, it is in alignment with the fact that faculty lacked training to support them.

The other faculty reported having students with varied levels of vision impairments in their courses. In this study, in addition to color-blindness, students had complete blindness, progressively lost sight during the course, and partial blindness. However, eight of the faculty respondents, representing the majority of participants reported students with complete blindness. In addition to complete blindness, two participants had students who progressively lost sight over the course of the semester, one participant reported a student with partial blindness, and one of the eight participants mentioned that their student was unable to read Braille. This shows that it is important for the faculty to understand the nature of the visual impairment, and meet the student's need accordingly. This was also demonstrated in Fichten et al. (2009)'s previous study. Although some of them shared that they were aware of a few technological tools, they reported that they were on their own to create accessible materials for their students. Therefore, it aligns

with Papadakaki et al. (2022)'s findings, as training faculty accordingly and providing them with the correct resources is still lacking.

The results of the study provide evidence that is consistent with the framework of Disability Studies Theory as applied to college students with disabilities. The evidence suggests that there is an urgent need to reckon students' disabilities as part of their identities, in lieu of excluding them (Anastasiou & Kaufman, 2011). By law, all students deserve to be accepted and respected, as opposed to being isolated. Students deserve empathy and compassion from their instructors and educational institutions, to be able to disclose their needs, and to receive the appropriate accommodations according to the impairment they might disclose (Gillies, 2014). This approach to serving students with disabilities aligns with the desire of the participants in the present work to better grasp the use of technology tools for visually impaired students through training and institutional support.

Challenges and Frustration

Faculty interviewed in this study expressed several challenges and feelings of frustration including lack of support, lack of institutional awareness, and lack of knowledge on accessible technology. It was found in our study that faculty must be properly equipped to support all students from the first day of the semester and beyond. However, most faculty reported lack of overall support and knowledge which created great frustration for both them and their students. Establishing inclusive education and awareness of already existing accessibility strategies and guidance to better prepare faculty remains a work in progress, according to the participants and previous studies such as Papadakaki et al. (2022) and Slater et al. (2015). The past decade saw several frameworks appear to promote inclusion in online learning such as UDI and UDL (Lombardi et al., 2015).

Nonetheless, Martin et al. (2019) noted that, online instructors' wish to learn more to improve their knowledge on online teaching and strategies. Instructors with less years of experience wish to be trained and implement newly acquired knowledge to their courses (Martin et al., 2019). Particularly when it comes to online accessibility, faculty reported in Valle-Flórez et al. (2021), Slater at al. (2015), and Papadakaki et al. (2022), that more training and professional development should be made available from other departments such as disability services. The more training they receive, the more satisfaction and confidence online instructors will demonstrate in teaching and designing online courses (Martin et al., 2019). More initiatives from the higher education institutions should be implemented to further train their faculty. This lack of awareness from the higher education institution administration was also reported by Glazatov (2012), as knowledge on instructional technology is generally lacking not only for faculty, but also at the higher administration level. Guidelines such as the UDL and WCAG 2.0 may be helpful to design online content according to different disabilities, and higher education resources should also be revised to allow funding for further ADA compliant technology tools and resources as needed (Glazatov, 2012).

Prioritizing Accessibility for Languages

The fact that accessibility is not only needed for instructional materials in English, but also other languages is an important issue to be addressed. As the interviews demonstrated, faculty do not seem to be supported enough by other campus entities to ensure accessibility in their language courses. Thus, there needs to be a vertical communication between them and the faculty members. According to Lewin-Jones and Hogson (2004), higher education institutions and student services should proactively provide assistance to faculty to support students with visual impairments. Although their study focuses on in-person foreign language instructions,

similar results than the interview participants seem to emerge across the United States. Cardenas and Inga (2021) revealed that, pedagogical resources and methodologies were paramount but lacking for students with vision impairments. In universities, understanding each department's responsibility when it comes to accessibility will allow for a more fruitful collaboration and remind the institution as a whole of the importance of accessible resources for students in need (Betts, 2013).

Faculty Training and Support in Delivering Accessible Online Language Courses

Despite the existence of the ADA and other laws since the 90s, around the world, it was unanimously noted that there is a gap between the accessibility law requirements and its implementation in four-year institutions. As a result, faculty reported lacking training and support to assist their students with visual impairments. This gap was also noted by Larkin (2013) and Lombardi et al. (2015), and it was reflected in the findings of this study. Faculty training and support in delivering accessible online language courses is discussed in this section. The themes that emerged include, on-campus support, external support, and need for clarity on foreign language accessibility.

On-campus Support

Out of the 10 participants in this study, only four of them shared that existing support was available in their respective institutions. This low number may be used to shed light on the lack of resources regarding online accessibility for visually impaired individuals, which was already stated in the existing literature. Faculty respondents unanimously reported that both office of disability services and higher administration ought to show further accessibility support, acknowledgment, and awareness.

Additionally, as not all visual impairments may be recognized as disabilities by offices of disability services, as such is the case for color blindness, establishing constant communication with students is paramount and efficient to identify students' accessibility and learning needs, and learning needs (Blankenship, 2008). This will also contribute to address the potential frustrations that faculty reported when attempting to make their courses accessible for their visually impaired students. Faculty are requesting strategies and training beyond audio transcripts and posit the importance of recognizing foreign languages. However, as one participant noted, there are no formal department meetings among faculty and campus specialists to address the lack of accessibility awareness or mandatory training for online courses. Another participant also mentioned that creating online, accessible materials on a short notice can also be time consuming and confusing on not knowing what needs to be changed or added to the course. Therefore, when it relates to faculty support and training, all participants unanimously highlighted that when offices of disability services are able to support faculty with the resources they need, the institution will promote a more inclusive learning environment which will impact the institution positively.

Repeatedly, two participants stated clarity on delivering the appropriate accessible online language content was still a work in progress as they feel that no further guidance is provided to them. As instructional technologists appeared to be present on campus, some expressed the need of receiving more guidance and training from them. As Rieber and Estes (2017) previously revealed, the courses' learning outcomes are not yet tailored solutions to each learner's need, which prevents an adequate use of UD (Universal Design). As such, not only instructional technologists but also other campus entities must learn to provide learning materials to faculty so they can better engage their students and allow for accessibility (Rieber & Estes, 2017).

In the 10 interviews conducted for the present study, it was stated by all participants that faculty wish to receive knowledge on how to tailor the purpose of their language assignments to their students' needs. As such, faculty lack training when it comes to accessibility, and are unaware of their responsibilities when it comes to making their course design accessible. Prior research has shown that knowledge on existing training such as Universal Design for Learning (UDL) and Web Content Accessibility Guidelines (WCAG) 2.1 guidelines may be required by institutions (Park et al., 2019). Nonetheless, applying these guidelines to the courses should also be required across all campuses to ensure accessibility and consistency. Therefore, within the entire institution, training may be provided not only to faculty but also to staff from offices of disability services and the Center for Teaching and Learning or equivalent, to ensure consistency in implementing accessibility. Lombardi et al. (2015) stated that awareness is needed in offices of disability services regarding the diversity in students' disabilities, so they can successfully study.

In addition, communicating and empathizing with students was repeatedly and unanimously suggested by all 10 participants, which echoes several results from previous studies such as those of Alamri and Tyler-Wood (2017), Blankenship (2008), and She and Martin (2022). Establishing a connection with the visually impaired students seemed to have encouraged them to pursue their studies successfully. This was also reiterated by one of the participants who themselves declared having a hearing impairment. When the student is noticed by their professors, it gives them reassurance and allows them to rely on them when additional help is needed.

External Support

On-campus support was lacking for the majority of the participants. There were only two participants that mentioned having utilized external support to make their course materials accessible for students with visual impairments. This aligns with the existing literature.

As mentioned by one of the participants, awareness on the existence of technology providers such as JAWS and other software is paramount. Implementing more technology to adapt learning to all students (Guilbaud et al., 2020) and knowing how screen readers work for instance was noted to be useful, so faculty can understand further what students need, and provide them with the correct materials. Undoubtedly, this connects well with the awareness of students' disabilities and instructors need help to correctly identify the tools that will be appropriate to help them. Collaboration in identifying accessible resources off and on campus to aid faculty in designing an accessible online language course are effective strategies to support faculty and other professionals (Gacs, 2020; Topor & Rosemblum, 2013). As such, four participants suggested contacting textbook publishers to receive accessible versions of textbooks, as well as audio and visual materials when applicable.

Need for Clarity on Foreign Language Accessibility

When it comes to foreign language courses, the offices of disability services and other institutions on campus may not always be aware of how to help the faculty make an assignment accessible. The importance of language courses and humanities do not seem to be priorities for the majority of the participants' host institutions. For instance, if the students are asked to interpret an audio file in the target language, then the solution to make it accessible should not be captioning it, as it would defeat the purpose of the task. As such, it was suggested by two faculty respondents that, an interpreter or a translator could be hired each semester when needing to translate or interpret accessible materials in the target language.

According to the CRDP framework, any disability disclosed by the students should be acknowledged as part of their identity traits to be respected as such, and allow them to be further included in their educational institutions (Yuknis & Bernstein, 2017). As pointted earlier by Ladson-Billings (1995), accessible pedagogy practices and students' backgrounds should align with the creation of accessible learning materials and methods to address students' needs. As such, the findings and the desire from faculty to assist their students and include them more provides evidence that to the CRDP framework. Therefore, faculty must be further trained on and knowledgeable about understanding and collaborating with other stakeholders when needed (Yuknis & Bernstein, 2017). It still remains scarcely addressed in the previous literature and may be seen as a diverging point, that campuses seem to currently be unable to support language faculty properly. Accessibility training is nonexistent. This holds true not only in language courses but all across four-year institutions (Martínez-Hernández & Bellés-Fortuño, 2021).

Strategies and Tools to Teach Students with Vision Impairments

As it relates to accessibility tools in online language courses, several findings were also identified. They were broadly categorized into technology integration strategies, and accessibility strategies. As Blake and Delforge (2004) stated, training on technology tools, accessibility and tools are key, as online courses become more and more common across all higher education institutions.

Technology Integration Strategies

If bridges are built not only between the original and the target language, but also among the different campus entities, this collaboration may be more effective to identify the appropriate accessibility tools that students with vision impairments would need to succeed in their online courses. As Betts (2013) and She and Martin (2022) posited, universities are in need of more

knowledge and awareness of accessible technology and resources. As Richardson (2010) and She and Martin (2022) previously found, students with a disability, particularly students with multiple ones, have a lower success rate in online courses when the course is not accessible. Therefore, the different accessibility accommodations need to acknowledge different types of disabilities and thorough support is required from the higher education institutions.

Throughout the 10 interviews, all 10 faculty respondents shared different strategies and tools that were utilized in their online language courses. These resources were able to assist their visually impaired students at varying levels. In the following table, the different strategies and tools are listed to serve as a guide for instructors and designers.

Table 3

Summary of Strategies and Tools for Online Language Courses

Strategies	Tools
Using accessible font types and size such as Verdana, 14	JAWS
PDF or PowerPoint-formatted presentations	Duolingo
Orally describing course materials	Zoom
Including written image descriptions with Alt text	Panopto
Using font style such as bold or italics instead of colors	Google Classroom
Option to submit coursework via email	Stella software
Showing empathy and communicating thoroughly with students	Audio files
Providing revised audio transcripts and captions	Padlet
Requesting accessible versions of textbooks	Book Creator
Playing with tones of the voice when teaching	Word documents
Increasing and magnifying screen resolution	Braille Translator
Transliteration to help students understand Chinese characters	Screen reader
Utilize the HTML format to upload course content on LMS	FlipGrid (now renamed Flip) for both audio and video forums
Request LMS accessibility checker	

Faculty respondents also discussed the tools and strategies to avoid. The following items to avoid were also mentioned by the participants: using Google Slides, as small buttons on the screen may not be visible or accessible. It was also recommended to avoid including additional spacing in between text lines in Word documents. Additionally, the website Kahoot! appeared to

not be accessible for individuals lacking color perception. Lastly, writing long descriptive paragraphs, instead of images with their Alt text descriptions was found to not be as informative or fulfilling for students.

When comparing these results with the literature, Kent (2015), Park et al. (2019), and She and Martin (2022) demonstrated LMS have the ability to provide accessible features for students with visual impairments. Additionally, implementing Alt text for images (Betts et al., 2013a; Case and Davidson, 2011; LaSala et al., 2019; She and Martin, 2022), accessible color schemes (Betts et al., 2013a), computer screen readers, text-to-speech software, Braille displays (Fichten et al., 2009; Mobaraki et al., 2017; She and Martin, 2022; Zhuhadar et al., 2016) showed effectiveness in delivering course contents. It is paramount to remind, however, that each of these tools must be utilized according to students' different visual impairments. For instance, Fichten et al. (2009) previously revealed that faculty creating PowerPoint presentations must remain mindful of adjusting font size, style, and color contrast. Additionally, ensuring Word documents and emails are utilized mindfully will help counter the lack of accessibility revealed by Fichten et al. (2009) at the time the study was conducted. As one participant suggested in the present study, clearly describing the purpose of the email to a fully blind student in the subject line of the email proved efficiency for the screen reader. HTML format was also previously found effective in Buggey (2000)'s study so course materials can be readable in Braille translators.

As Retorta and Cristovão (2017) and Hamid (2020) previously suggested, mobile applications such as Duolingo and Zoom were also cited among effective tools to use for visually impaired students. Additionally, Case and Davidson (2011), Lazar (2021), She and Martin (2022), and Zhuhadar et al. (2016) restated the importance of accurate captions and descriptions

for students with visual impairments. As other technology resources were shared in the interviews, it could serve to show that a myriad of tools is readily accessible for higher education educators to adopt and be implemented in online language courses.

Accessibility Strategies

Martínez-Hernández and Bellés-Fortuño (2021) revealed that, a variety of formatting and implementing accessibility strategies should be in place, particularly for students who do not read Braille. Additionally, Cardenas and Inga (2021) reported that audio or Braille materials are often not user-friendly for faculty or students to locate the resources they may need. In addition, the faculty respondents noted that previous experiences on accessibility technology tools and LMS course design are paramount.

Several tools such as screen readers, Alt text, color schemes, and document formats are available for students with visual impairments; however, they may not be implemented in the courses due to a lack of resources and support by their respective institutions, as revealed by Fichten et al., (2009). Alt text, captions, and color schemes were also noted to be effective in Betts et al. (2013a), Case and Davidson (2011), LaSala et al. (2019), and She and Martin (2021)'s studies. As Fichten et al. (2009) also demonstrated in alignment with the participants' shared accessibility tools, when a student reports complete blindness, screen readers, text-to-speech software, playing with the tone of the voice, as two faculty respondents suggested, and Braille displays may be utilized by students to facilitate their learning. Then, students with low vision may use screen magnifiers to assist them in accessible materials (Fichten et al., 2009; Roberts et al., 2011). As participants suggested, PDF documents would also need to be accessible for screen readers. Case and Davidson (2011) had also found that, a tool such as Optical Character Recognition (OCR) may be beneficial to detect any inaccessible PDF

document. It is still salient that inaccessible PDF documents are still present, and universities have not yet addressed this issue (Lazar, 2021). In addition, innovative accessibility strategies pertaining to language learning such as oral descriptions of course materials and transliteration were suggested by participants and may be implemented effectively if faculty are made aware of them through training. Non-textual course materials were previously suggested by She and Martin (2021) as well as Vines et al. (2019) for the field of STEM, and it was interesting to note that they could also be positively impactful in online language courses.

This finding was in alignment with a prior study where Lombardi et al. (2015) stated that due to lack of funding from their institutions, faculty revealed to lack training and knowledge to provide technology integration and inclusion in their courses. Nonetheless, the availability of technology and accessibility strategies are salient. Accessibility strategies suggested such as avoiding additional spaces and adopting accessible fonts were mentioned by faculty respondent, but not in existing literature. Therefore, efforts can be made to design ADA courses with materials targeted to each student's needs is not only a legal requirement but also an initiative to encourage students to pursue their studies and learn to utilize new technology tools for their current and future endeavors, particularly in language courses that may be required in all majors (Eikel-Pohen, 2019; Orsini-Jones, 2009).

Hence, the findings from the interviews aligned and confirmed that, higher education institutions must prioritize accessibility for students with vision impairments in online language courses. Despite having several years of teaching experiences, faculty would benefit from required accessibility training to understand the importance and necessity of knowing how to address different types of learners in their courses. Having knowledgeable faculty about vision and other impairments would ultimately improve the institution's accessibility and also increase

enrollment and success rate (Aquino, 2016; Fichten et al., 2016), as articulated in the CRDP framework (Yuknis & Bernstein, 2017). Additionally, the CRDP requires the acknowledgment of students with disabilities and better addressing their needs to offer them equal learning experiences in their courses (Ladson-Billings, 1995), which aligns with the participants' wish to improve accessibility to their course content. When faculty are provided support and training, both prior research and this study's interview findings showed a higher success rate and satisfaction from students with visual impairments.

Key Findings

To conclude, this study highlighted the necessity of prioritizing online accessibility in higher education courses, as it has been a legal requirement since 1973. Particularly for foreign language courses, it is urgent to further address accessibility pertaining to online course materials. As visually impaired students may benefit from learning foreign languages in an online setting, it is paramount for faculty and their higher education institutions to advocate for awareness about students' needs. As a result, faculty must be provided support and training to gain knowledge on how to support students with needs related to vision impairment and use appropriate tools and strategies. Additionally, other on-campus stakeholders such as the office of disability services, higher education administrations, librarian, and instructional technologists may receive training to allow them to collaborate with faculty and assist them with making their course design and materials ADA compliant. External support, such as technology providers and textbook publishers, should also be crucial resources for faculty to make materials accessible, depending on the visual impairments. Lastly, as several, affordable strategies and tools already exist, gaining knowledge on how to utilize them appropriately would help provide all students with accessible resources that may not require them to download any external tools. When

faculty establish a thorough communication with their students to better identify their needs and the tools they might have available on their own devices, the teaching and learning environment is improved and consequently visually impaired students may succeed as learners of a foreign language in an online setting.

Implications

Faculty encountered students with varied types of vision impairment, so they must be prepared to meet their student needs. Despite having several years of teaching experiences, tailored solutions to assist students with vision impairments should be readily available within the start of each semester. As such, the disability service may be restructured to meet institutional requirements and be redirected back to the appropriate purposes. As it was noted through the variety of online tools, it is possible to be more creative in online courses, more open than relying on existing models. Additionally, online language course specific needs may be resolved by offering the appropriate training not only to faculty, but to all campus entities that are involved with accessibility for students. According to the CRDP framework, it is also stated that, institutions may take the initiative to improve their learning environments for all students with disabilities, according to their needs to succeed (Betts et al., 2013a; Yuknis & Bernstein, 2017). By being empowered to create a welcoming and engaging course, faculty will start implementing new pedagogical strategies according to their students' needs (Wynants & Dennis, 2017), which has been confirmed by all 10 interview participants for the present study.

Faculty expressed lack of knowledge on accessible technology and strategies. According to the findings, one of the main implications to improve online accessibility in higher education would be to require training to all campus entities such as faculty, instructional designers, and disability specialists. Therefore, training, workshops, and consultations are important for them to

gain knowledge on the accessible technology. As faculty expressed lack of support, the next step may be for the institution to require that, instructional designers and/or disability specialists provide one on one consultation with faculty members to help them specifically on the accessibility issues they encounter. This could be a viable strategy, as it would allow for collaboration, and it would allow faculty to gain knowledge and re-use the accessible materials in the future. Additionally, more training on teaching tools and strategies are lacking. Although some participants reported self-learning about online accessible tools, there was often a lack of awareness regarding accessibility with their department chair or, at a larger scale, at the institution.

While most faculty also reported the need for further training on technology tools and strategy integration, this study revealed the availability of such resources. Tools and strategies exist and most of them are available at no cost for the institution and students. Thus, knowledge on how to effectively identify and utilize them would be the next step to further aid the lack of accessibility. Particularly in the field of language teaching and learning, it is paramount that foreign languages are not overlooked, and that institutional support is also offered for accessibility in foreign language courses. In addition to technology integration, a translator or an interpreter may be hired to fulfill the faculty's needs if the office of disability service is unable to fully provide faculty with accessibility assistance. Thus, there is a need to clarify the requirements that faculty receive to accommodate students with vision impairments. As previously discussed, courses such as foreign languages, as well as awareness regarding the purpose of the course materials and assignments should align with the learning outcomes so all students can further engage with the target language.

Limitations

There were a few limitations to this study. Though faculty were selected from varied institutions, there still might not be representation of all four-year institutions. They offered comparable findings within the United States and can be utilized to other higher education institutions around the world.

Additionally, as the focus of this study was on any visual impairment type, the accessibility accommodations, strategies and tools needed by the students may differ, as each level of visual impairment may require different accommodations and needs from the students. Similarly, all 10 faculty respondents were teaching different languages which involved different strategies used in their target languages with visually impaired students. Therefore, not all respondents' experiences may be fully comparable among each other.

Lastly, only faculty who volunteered were interviewed, and only a single researcher conducted all the interviews and data analysis. As a result, there could be potential bias in the interview process and data coding and analysis. Finally, interviews were the only data source, so there was no triangulation of data.

Directions for Future Research

Conducting separate, qualitative research studies with language faculty teaching the same language may be an enriching path so other language faculty can more easily identify themselves and be inspired to adopt new strategies, tools, and improve their courses' accessibility. As the COVID-19 pandemic continues, unforeseen circumstances in the field of education particularly contributed to shed light to current lack of online accessibility strategies and training in higher educations, it remains urgent to continue advocating and resolving accessibility issues as also shown by Lazar (2021) and She and Martin (2021). Therefore, conducting similar studies with data triangulation may be highly beneficial for researchers and educators to reinforce the need to

further study these accessibility issues. For instance, adopting an observation approach by examining faculty's accessibility practices directly in their online language courses, as well as through case studies so that participants may have the opportunity to share their experiences with visually impaired students, and the researcher may be fully immersed in the data collection. These additional data collection procedures may reduce the chances for potential bias (Brinkmann & Kvale, 2015).

In addition to visual impairments, some future qualitative research may involve focusing on other disabilities such as hearing and learning impairments in online language courses. Researchers are recommended to also examine accessibility issues in other online courses or programs. In addition, it would be of interest to focus on faculty all teaching the same language to examine whether similar phenomena and themes can be identified, in a replicate qualitative study. Relatedly, future research should also allow students to voice their concerns when taking an online language course. As Rieber and Estes (2017) previously revealed, student success for those with disabilities can be negatively impacted if they are unable to equally access online resources for their courses. Therefore, a study that would be gathering students with visual impairment's voices could also be meaningful to understand their experiences when getting to universities, and to examine the support that they receive (Bacon & Baglieri, 2021).

As two-year institutions such as community colleges may function differently and have a smaller amount of language faculty available, this study could be replicated with faculty exclusively in two-year institutions. This would continue to raise awareness on the need for prioritizing accessible language courses and taking advantage of all the resources and teaching strategies that already exist and continuously evolve to improve learners' experiences. Future research could also use quantitative research methodologies, particularly if the sample of

students or faculty can be larger for a potential study on online accessibility that would have been previously explored to some capacity. Finally, researchers can also review online courses to identify various strategies faculty use with students with visual impairments.

Personal Reflections on Research Process

To conclude, I believe that several technology tools have helped me save time in order to further focus on the data analysis process. First, in the data collection, using the automated Zoom transcription feature helped tremendously as a foundation for the interview transcript. Nonetheless, revising it in tandem with the audio recording helped correct the few words that were not correctly identified by the transcription feature, as well as the ability to add emotions such as laughter and potential interjection that made the interview more real, to give it a conversational feel. Then, in the data collection and analysis process, I enjoyed learning how to use NVivo, as it was user-friendly and helped me better organize the content into codes and sub-codes. In addition, keeping an analytical journal to provide me with structure during the data analysis was also extremely helpful. As I adopted a phenomenological approach for this study, I was pleased to note that I have found common phenomena between all 10 interviews to address the three, initial research questions. As I analyzed the findings, I noticed that several codes could merge and become one theme, and it was my goal to get to the point where I can have no more than three themes to be able to respond to the three research questions and connect them with the existing literature.

Final Recommendations

In summary, this dissertation topic and study through interviewing other language faculty inspired me to focus on online accessibility in language courses more in-depth. As I have been finding the field of online accessibility fascinating since before the COVID-19 pandemic forced

instructors and students to use more online resources, it was a true confirmation that I am still passionate about disseminating my findings and expanding my topic. As a language faculty member myself, I hope to further advocate for students with visual impairments and strive to improve my own courses. I also wish for language faculty to be supported within their own institutions, and for higher education institutions to all work together and allow departments to collaborate to offer training when needed. Reaching out to external stakeholders will also be beneficial to improve online language teaching and learning.

I will also aim to examine other disabilities, as learning a foreign language should be accessible to all individuals and will undoubtedly open doors for their future endeavors. In addition to the inspiring remarks from my 10 interviewees, I have always been adamant that foreign languages and the cultures that surround them transform people positively, and have the opportunity to build their own, unique perception of the world.

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APPENDICES

Appendix A: Interview Protocol

Project Title

Faculty Experiences in Teaching Students with Visual Impairments in Online Language Courses in Higher Education.

This is a semi-structured interview starting with a few open-ended questions. The interviewer will possibly ask some probing questions depending on the response of the interviewee in the interview process.

Warm up questions

- Tell me a little bit about yourself as well as your personal and professional backgrounds.
- What language/s do you teach?
- Tell me how comfortable you feel when using instructional technology for your courses.

Faculty personal experiences when teaching students with a visual impairment online

Now, I am going to focus more on your experiences interacting with students with visual impairments.

- What kind of visual impairment did your students report?
- What was the student's particular need in order to be successful in your classes?
- How did your online teaching practices change when teaching students with a visual impairment online?

Opportunities for faculty support and training

- When you received the notice that you had a student with a visual impairment in your class, from which campus entity did you request support?

- How has your department chair, Office of Disability Services, Center for Teaching and Learning and/or any other entity supported you in delivering accessible online instruction for visually impaired students?
- Which additional resources/training would you benefit from, in order to successfully design an ADA compliant online course?

Technology tools and strategies

- Tell me about a tool of which you were unaware before you taught your student/s with vision impairment, and may have benefited them.
- What benefits do they provide to the students to enhance their learning experiences?
- Which technology tools have been available to the visually impaired students?
- Tell me about a time when you or your student encountered a challenge while using accessible technology.

Suggestions for change

- If you could make things different for online course education for visually impaired students, based on your experiences, what would you change?

Wrap up and final comment question

Is there anything else that you would like to share with me?

Appendix B: Codes and Sub-code identified in NVivo